NEW YORK STATE | Office of General Services

DESIGN & CONSTRUCTION GROUP
THE GOVERNOR NELSON A. ROCKEFELLER
EMPIRE STATE PLAZA
ALBANY, NY 12242

ADDENDUM NO. 2 TO PROJECT NO. 47592

CONSTRUCTION, HVAC, PLUMBING AND ELECTRICAL WORK
RENOVATE INTERIOR SPACES
STATE ARMORY
150-41 6TH AVE
WHITESTONE, NY

June 27, 2025

NOTE: This Addendum forms a part of the Contract Documents. Insert it in the Project Manual. Acknowledge receipt of this Addendum in the space provided on the Bid Form.

GENERAL REQUIREMENTS - COMMON

1. DOCUMENT 015000.02 CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS: Discard the Document bound in the Project Manual and substitute with the accompanying Document (pages 015000.02 – 1 thru 015000.02 – 7) noted "Printed 6/25/2025".

CONSTRUCTION WORK SPECIFICATIONS

2. SECTION 028213 ASBESTOS ABATEMENT: Discard the Section bound in the Project Manual and substitute with the accompanying Section (pages 028213 – 1 thru 028213 – 9) noted "Printed 6/25/2025".

3. SECTION 033000 CAST-IN-PLACE CONCRETE: Discard the Section bound in the Project Manual and substitute with the accompanying Section (pages 033000 – 1 thru 033000 – 25) noted "Printed 6/25/2025".

4. SECTION 042200 CONCRETE UNIT MASONRY: Discard the Section bound in the Project Manual and substitute with the accompanying Section (pages 042200 – 1 thru 042200 – 12) noted "Printed 6/25/2025".

5. SECTION 051200 STRUCTURAL STEEL FRAMING: Discard the Section bound in the Project Manual and substitute with the accompanying Section (pages 051200 – 1 thru 051200 – 10) noted "Printed 6/25/2025".

6. SECTION 053100 STEEL DECKING: Discard the Section bound in the Project Manual and substitute with the accompanying Section (pages 053100 – 1 thru 053100 – 6) noted "Printed 6/25/2025".

7. SECTION 055000 METAL FABRICATIONS: Add the accompanying Section (pages 055000 – 1 thru 055000 – 6) to the Project Manual.

8. SECTION 066116 SOLID SURFACING FABRICATIONS: Delete this Section in its entirety.

9. SECTION 079100 EXPANSION JOINT COVER ASSEMBLIES: Add the accompanying Section (pages 079100 – 1 thru 079100 – 3) to the Project Manual.

10. SECTION 096513 RESILIENT BASE AND ACCESSORIES: Discard the Section bound in the Project Manual and substitute with the accompanying Section (pages 096513 – 1 thru 096513 – 7) noted "Printed 6/25/2025".

11. SECTION 102219 DEMOUNTABLE PARTITIONS: Discard the Section bound in the Project Manual and substitute with the accompanying Section (pages 102219 – 1 thru 102219 – 7) noted "Printed 6/25/2025".

12. SECTION 122413 ROLLED WINDOW SHADES: Add the accompanying Section (pages 122413 – 1 thru 122413 – 6) to the Project Manual.

HVAC WORK SPECIFICATIONS

13. SECTION 230519 METERS AND GAUGES FOR HVAC PIPING: Add the accompanying Section (pages 230519 – 1 thru 230519 – 7) to the Project Manual.

14. SECTION 230523 GENERAL-DUTY VALVES FOR HVAC PIPING: Add the accompanying Section (pages 230523 – 1 thru 230523 – 7) to the Project Manual.

PLUMBING WORK SPECIFICATIONS

15. SECTION 099123 INTERIOR PAINTING: Discard the Section bound in the Project Manual and substitute with the accompanying Section (pages 099123 – 1 thru 099123 – 9) noted "Printed 6/25/2025".

ELECTRICAL WORK SPECIFICATIONS

16. SECTION 281300 CARD ACCESS CONTROL SYSTEM: Discard the Section bound in the Project Manual and substitute with the accompanying Section (pages 281300 – 1 thru 281300 – 10) noted "Printed 6/25/2025".

17. SECTION 282304 INDOOR AND OUTDOOR SURVEILLANCE CCTV SYSTEM: Delete this Section in its entirety.

GENERAL DRAWINGS

18. Revised Drawings:
    a. Drawing Nos. G-002, G-003, G-101, G-102, noted "ADDENDUM 02", accompany this Addendum and supersede the same numbered previously issued drawings.

CONSTRUCTION WORK DRAWINGS

19. Revised Drawings:
    a. Drawing Nos. H-100, C-150, S-001, S-100, S-101, S-102, S-401, S-501, S-510, A-100, A-101, A-104, A-105, A-106, A-107, A-108, A-109, A-110, A-400, A-403, A-500, A-501, and A-600, noted "ADDENDUM 02", accompany this Addendum and supersede the same numbered previously issued drawings.

HVAC WORK DRAWINGS

20. Revised Drawings:
    a. Drawing Nos. M400 and M600, noted "ADDENDUM 02", accompany this Addendum and supersede the same numbered previously issued drawings.

PLUMBING WORK DRAWINGS

21. Revised Drawings:
    a. Drawing Nos. F-001, F-401, and F-501, noted "ADDENDUM 02", accompany this Addendum and supersede the same numbered previously issued drawings.

ELECTRICAL WORK DRAWINGS

22. Revised Drawings:
    a. Drawing Nos. ED-100, ED-101, E-100, E-301, E-302, E-500, E-600, E-602, and FA-001, noted "ADDENDUM 02", accompany this Addendum and supersede the same numbered previously issued drawings.

END OF ADDENDUM

Brady M. Sherlock, P.E.
Director, Division of Design
Design & Construction

SECTION 015000.02 - CONSTRUCTION FACILITIES & TEMPORARY CONTROLS

PART 1 - GENERAL

1.1 DESCRIPTION

A. Provide the construction facilities and temporary controls necessary for the Work, unless otherwise indicated.

1. The construction facilities and temporary controls specified to be provided by a particular Contract shall be kept operational by that Contractor for the Work of all related Contracts at all times Work is being performed by a Contractor.
2. The construction facilities and temporary controls specified to be provided by a particular Contractor shall be installed as soon after award of the Contract as necessary to enable the Work of each Contract to proceed on schedule and maintained until completion of the Work of all related contracts unless otherwise directed in writing.
3. Any Contractor who requires additions to the construction facilities and temporary controls specified to be provided by another Contractor, shall provide and maintain them.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Disposal of Asbestos-Containing Materials: Section 028213 (the Contract containing Section 028213).

1.3 TEMPORARY LIGHT AND POWER

A. Electrical energy for temporary light and power will be made available without charge.

B. Extent of Temporary Wiring: Contractors may ascertain the extent of the temporary wiring provided under the Electrical Work Contract by examining the Electrical Drawings.

C. All Contracts:

1. Any Contractor requiring additional lighting shall provide additional fluorescent fixtures or incandescent lampholders (with lamps), but in no case shall the load on any branch circuit or feeder exceed its rated capacity.
2. Install materials for temporary light and power in conformance with the National Electrical Code.
3. Materials for temporary light and power need not be new if they are in satisfactory operating condition.
4. Provide ground-fault protection for personnel (such as portable plug-in type ground-fault circuit-interrupters) on single phase 15 and 20 ampere receptacle outlets which are in use.
5. Receptacle outlets, portable cord connectors and attachment plugs shall have standard NEMA configurations.
6. As the progress of the Work allows, and as approved, completed portions of the permanent wiring and electrical service may be utilized for temporary light and power.

1.4 TEMPORARY WATER

A. Water will be made available for the Work without charge at source or sources directed within the limits of the existing supply and usage.

B. All Contracts: Prevent waste of water.

1.5 TEMPORARY TOILETS

A. Construction Work Contract: Provide toilet facilities for Contractor's and subcontractors employees engaged on the Project, including employees of other contractors. Locate toilets where directed and maintain them in a sanitary condition.

NUMBER OF EMPLOYEES	MINIMUM NUMBER OF FACILITIES
20 or less	1 toilet
20 or more	1 toilet and 1 urinal per 40 employees
200 or more	1 toilet and 1 urinal per 50 employees

*Toilet/Urinal Combinations shall count as only one facility.

1. Where water and sewer connections are available, provide water closets, otherwise provide approved chemical or electric toilets.
2. Inside buildings, locate toilet facilities no more than 4 stories or 60 feet above or below, nor more than 500 feet travel on the same level from the work location of any person.
3. Locate toilet facilities no more than 1000 feet from any work location.

    a. Exception: Mobile crews having readily available transportation to nearby toilet facilities.

1.6 PROTECTION OF WORK AND EXISTING PROPERTY

A. Protect installed Work and existing property during performance of the Work.

B. Maintain the building in a watertight condition during performance of the Work.

C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.

D. Provide protective coverings at wall projections, jambs, sills, and soffit of openings.

E. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, and movement of heavy objects by covering them with durable sheet materials.

F. Protect smoke detectors from airborne dust and debris.

1. At the beginning of each work day, provide protective coverings over smoke detectors in areas where airborne dust and debris will be generated by the Work.

2. At the end of the work day, clean the areas in which the smoke detectors are located by whatever means necessary to assure that airborne dust and debris will not contaminate the smoke detectors, then remove protective coverings.
3. Provide signs, instructions, and alternate methods for reporting a fire during the periods that the smoke detectors are covered.
4. Notify the Director's Representative and have procedures approved.

G. Prohibit traffic or storage upon waterproofed and roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.

H. Cleaning tools of cementitious and other insoluble materials:

1. Do not wash tools in sinks or other sanitary drainage systems. Protect all drainage systems from debris that can clog or damage piping and fixtures.
2. Take all precautions necessary to prevent cementitious and other insoluble materials from flowing into floor drains.
3. Dispose of excess cementitious and other insoluble debris with the other rubbish.

1.7 BARRIERS AND ENCLOSURES

A. All Contracts: Provide barriers during performance of the Work to:

1. Prevent unauthorized entry to work areas.
2. Allow for State's occupancy of Site.
3. Protect existing facilities and adjacent properties from damage.
4. Protect vehicular and pedestrian traffic.

B. Construction Work Contract:

1. Temporary Partitions: Provide temporary partitions to form fire resistive barriers between work areas and areas occupied by State personnel. Construct the partitions of 3-5/8 inch width steel framing or 2 x 4 wood framing, with 5/8 inch thick Type X (ASTM C 36) gypsum board on both sides of partition. Secure the partitions in place without damaging existing construction. Seal joints on the State occupied side with joint tape and compound. Provide 1-3/4 inch thick solid core flush wood doors or 18 gage flush steel doors, and steel door frames. Equip doors with full mortise hinges and lockset. Furnish the Director's Representative with 2 keys for each lock.
2. Temporary Dust Barriers: Provide temporary dust barriers to prevent the spread of dust from the work areas. Construct the dust barriers of wood framing sheathed with 6 mil polyethylene film. Secure the dust barriers in place without damaging existing construction.

1.8 SECURITY

A. Key Deposits: A $25 deposit will be required for each key issued by the Facility. Deposits will be refunded upon return of the keys.

B. Facility Key Regulations:

1. Sign Facility keys out and in on a daily basis unless otherwise directed.
2. Keep keys on person at all times while on the premises. Do not loan or give keys to other persons.
3. Do not remove keys from the premises without written permission from the Director's Representative.
4. Report lost, missing, or stolen keys immediately to the Facility Safety/Security Department. Assume responsibility for cost of necessary key and lock replacement as a result of lost, missing, or stolen keys.

C. Identification Cards: Photo ID badges will be provided by the contractor for all contractor employees. Badges will be held at the facility security desk and issued to authorized workers by the facility on a daily basis.

1. All Contractors, associated sub-contractor employees and vendors shall provide all information required for background checks to meet installation access requirements to be accomplished by NYS DMNA / NYNG installation Security Office. Contractor workforce must comply with all personal identity verification requirements as directed by NYS DMNA/NYNG installation Security Office.
2. All contractor employees, including subcontractor employees and vendors who are not in possession of the appropriate security clearance, will be escorted in areas where they may be exposed to classified and/or sensitive materials.
3. In addition to the changes otherwise authorized by the changes clause of this contract, should the Force Protection Condition (FPCON) at any individual facility or installation change, the Government may require changes in contractor security matters or processes.

D. Promptly relock doors and security screens located in access routes, storage areas, and work areas after use.

E. Restore, by the end of each workday, existing in place safety/security items such as doors, screens, alarm systems components, that required removal, replacement, or adjustment to perform the Work, unless otherwise authorized in writing by the Director's Representative.

F. Remove all tools and materials from occupied work areas when the work areas are not attended by employees and at the end of each workday. Store tools in a locked toolbox, cabinet, or shed. Store materials where directed.

G. Access and general protection/security policy and procedures:

1. Contractors, and all associated subcontractors and vendors (contractor workforce) shall provide a verified list of all scheduled and on-site employees to the facility/site force protection/security representative, daily.
2. Contractor workforce will present current and valid government issued photo identification (no copies) for access to DMNA properties.
3. Contractor workforce must comply with all security requirements as directed by local policy. Should the Force Protection Condition (FPCON) at the site/facility change, DMNA/NYNG may require changes in contractor security matters or processes.

H. Escort requirement, policy and procedures:

1. All contract employees, including subcontractor employees and vendors who are not in possession of the appropriate security clearance, will be escorted in areas where they may be exposed to classified and/or sensitive materials and/or sensitive or restricted areas.
2. The contractor will coordinate with the DMNA representative and/or the facility force protection designated representative/security personnel for access when required.

I. Photographing, video recording and use of Commercial off-the shelf Unmanned Aerial Systems (COTS-UAS):

1. Photographing, video recording and COTS-UAS operation on/over NYS DMNA and NYARNG property and facilities is prohibited.
2. Exceptions may be obtained through MNFE and the NYARNG OIC&C with valid explanation defining need and purpose.
3. Contractors, subcontractors and vendors with approval to photograph and/or record video, will be escorted and content will reviewed by NYS DMNA and/or NYARNG personnel.
4. Photographing and videoing of personnel, military equipment, security measures, operations, personnel and equipment is strictly prohibited.
5. Disseminating, sharing of and posting photographs and/or videos of NYS DMNA and NYARNG facilities, personnel, equipment and operations on public facing web sites to include social media, both company and personal accounts, is prohibited.
6. Prior to written approval, contractors, subcontractors and vendors will provide COTS-UAS type, brand, manufacturer, model, registration, valid licensing, and present FAA authorization for sites located within FAA jurisdiction.

1.9 WATER CONTROLS

A. Provide and maintain pumping equipment necessary to keep the work areas free from water. Discharge water into existing storm drainage systems or otherwise disperse as directed.

1.10 FIRE PREVENTION

A. Take precautions necessary to prevent fires.

B. Fuel for cutting and heating torches shall be acetylene or LP-gas only and shall be contained in Underwriters Laboratory or Federal Department of Transportation approved containers.

C. Furnish and maintain a currently inspected 20 pound capacity multi-class A:B:C fire extinguisher in the immediate vicinity where welding tools or torches are in use.

D. Furnish and maintain a currently inspected fire extinguisher of the appropriate class and size whenever the temporary storage of materials changes that areas classification of fire load or life safety.

E. Do not use flammable liquids, other than those specified, within a building without the written approval from the Director’s Representative.

F. Tarpaulins shall be flameproof and shall be securely anchored when attached to scaffolding or when used to enclose any portion of a building.

G. If required by the nature of the work and facility regulations, the Contractor shall obtain from the facility and pay all costs associated with "Hot Work Permits" including fire watches to execute the work of its contract. Perform hot work in accordance with the Fire Code of New York State and the Hot Work Program approved for the work. Prior to, during and after performing hot work, inspect the hot work area for compliance with the requirements of the permitted Hot Work Program.

1. Post signage "Caution: Hot Work In Progress - Stay Clear" in conspicuous locations warning others before they enter a hot work area where the area is accessible to persons other than the operator of the hot work equipment.

H. Include facility hot works permit program requirements in the project manual appendix.

1. See applicable facility permits and conditions bound in the Appendix.

1.11 TEMPORARY FIRE PROTECTION

A. If the existing building is to be partially occupied during the course of the project, all existing exits, fire walls, fire barriers and fire protection systems shall be continuously maintained in the occupied phases in compliance with the Fire Code of New York State. Comply with NFPA 241 for items not specifically addressed in the Fire Code of New York State.

B. Those portions occupied by the facility must be available for their use 24 hours a day, seven days a week during the contract period unless otherwise scheduled in these documents.

C. Prior to removal of existing fire walls, fire barriers and fire protection systems, if such removal is part of the work, install equivalent temporary fire walls, fire barriers and fire protection systems as defined in these documents and as approved by the Director's Representative and/or the facilities representative.

D. The cost of all labor, fire watches, variances, materials, installations, maintenance and removal of such temporary fire protection systems or modifications to the existing systems are the responsibility of the Contractor. Install permanent fire walls, fire barriers and fire protection systems, if provided as part of the work, as soon as practical.

1.12 PARKING

A. No parking will be allowed at the Site, except for vehicles delivering material and equipment while they are being unloaded.

1.13 RUBBISH REMOVAL

A. Clean up and containerize the rubbish (refuse, debris, waste materials, and removed materials and equipment) resulting from the Work at least once a day and more often if the rubbish interferes with the work of others or presents a hazard. Leave work areas broom clean, except where more stringent cleaning is specified, at the end of each day. Locate containerized rubbish on the Site where directed.

B. Remove rubbish from State property at least once a week and more often if the rubbish presents a hazard. Properly dispose of rubbish.

C. Burning of rubbish will not be permitted.

1.14 RELOCATION AND REMOVALS

A. Should a change in location of any construction facilities and temporary controls be necessary in order to progress the Work properly, remove and relocate such items as directed.

1. Electrical Work Contract: Frequently relocate/revise the temporary lighting as Contractors progress the Work of their contracts causing changes to the condition of the building (installation or relocation of walls, partitions, ceilings, equipment, etc.). Keep pace with the changes and maintain a minimum of 10 foot candles in each recomposed work area.

B. Remove the construction facilities and temporary controls when they are no longer required. Restore permanent facilities used for or connected to temporary facilities to their original condition or better.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 015000

SECTION 028213 - ASBESTOS ABATEMENT

PART 1 - GENERAL

1.1 SUMMARY

A. This Section specifies the procedures for disturbance and removal of existing asbestos-containing materials (ACM) and disposal of removed materials. The results of the testing for ACM are listed in the Building Asbestos Survey Report bound in the Appendix. Also see Document 003126.

1. The Building Asbestos Survey report was compiled by an ELAP certified laboratory.
2. In order to determine asbestos content, samples were analyzed by polarized light microscopy (PLM) and/or transmission electron microscopy (TEM).
3. The report is intended for State Design and estimate purposes only, and is included to provide bidders with the same information available to the State.
4. The Bulk Samples are representative of like materials in the Work area. All ACM may not have been sampled.

B. Type of Asbestos Abatement Project:

1. Large Asbestos Abatement Project: An asbestos project involving the removal, disturbance, repair or handling of more than 160 square feet or 260 linear feet of ACM.

C. Scope of Work:

1. Remove and dispose of floor tile. Typ. for 2,000 sq. ft.
2. Remove and dispose of 2-layers of floor tile. typ. for 1,750 sq. ft.
3. Remove and dispose of thermal systems insulation on pipes & fittings. Typ. for 16 fittings & 55 lin. ft. pipe insulation
4. Remove and dispose of plaster wall and associated framing systems, all as asbestos containing material. Typ for 180 lin. ft. of wall/ 2,400 sq. ft. of plaster surface.
5. Remove and dispose of electrical wiring (branch circuitry for devices, switches, light fixture wiring, electrical panels and the like) to its source after disconnection of power by electrical trade contractor. Typ. for 1,500 lin. ft. of multi-conductor wiring
6. Remove and dispose of plaster wall (one side), ceilings & concealed thermal systems insulation on pipes & fittings. Typ. for 78 fittings, 200 lin ft. pipe insulation, 850 sq. plaster clg. & 4,200 sq. ft. plaster wall.
7. Remove and dispose of ACT ceilings to access pipe insulation. Typ. for 600 sq. ft.
8. Remove and dispose of roofing, flashing and associated tars to top of structural deck and from mechanical equipment / penetrations / curbs. Typ. for 20 sq. ft. each location / 40 sq. ft. total.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Existing Hazardous Material Information: Document 003126.

B. Summary of the Work: Section 011000.

C. Removals, Cutting, and Patching: Section 017329.

D. Handling of Lead Containing Materials: Section 028304

1.3 REFERENCES

A. New York State Department of Environmental Conservation (DEC) 6NYCRR:

1. Part 360 Solid Waste Management Facilities.
2. Part 364 Waste Transporter Permits.
3. Part 370 Hazardous Waste Management System-General.
4. Part 371 Identification and Listing of Hazardous Wastes.
5. Part 372 Hazardous Waste Manifest System and Related Standards for Generators, Transporters and Facilities.
6. Part 373 Hazardous Waste Management Facilities.

B. Occupational Safety and Health Administration (OSHA): Asbestos Regulations (29 CFR Part 1926.1101).

C. U.S. Environmental Protection Agency (USEPA):

1. National Emission Standards for Hazardous Air Pollutants; Asbestos NESHAP Revision; Final Rule.
2. Asbestos Emergency Response Act (AHERA) (40 CFR Part 763, Subpart E).

D. New York State Department of Labor (DOL): Industrial Code Rule 56.

1.4 DEFINITIONS

A. Authorized Personnel: Facility or the Director's Representative, and all other personnel who are authorized officials of any regulating agency, be it State, Local, Federal or Private entity who possess legal authority for enforcement or inspection of the work.

B. Clearance Criteria: Shall be determined and established by a Certified Asbestos Project Monitor with an independent testing lab employed by the Director's Representative, conforming to all standards set forth by all authorities having jurisdiction, mentioned in the references, and issue the certification of cleaning.

C. Site Specific Variance: Relief in accordance with section 30 of the Labor Law from specific sections of Industrial Code Rule 56 for a specific project.

D. Phase I & II: Asbestos Project phases as defined and subcategorized in ICR 56-2.

1.5 ABBREVIATIONS

A. ASTM: American Society for Testing and Materials
1916 Race Street
Philadelphia, PA 19103

B. CFR: Code of Federal Regulations
Government Printing Office
Washington, DC 20402

C. DOL: New York State Department of Labor
Harriman State Office Building Campus
Albany, NY 12240

D. NIOSH: National Institute for Occupational Safety and Health
Building J.N.E. Room 3007
Atlanta, GA 30333

E. OSHA: Occupational Safety and Health Administration
200 Constitution Avenue
Washington, DC 20210

F. USEPA: United States Environmental Protection Agency
401 M Street SW
Washington, DC 20460

1.6 ASBESTOS SITE SPECIFIC VARIANCE

A. If a site specific variance is sought, the application must be submitted by the contractor's NYS DOL Certified Asbestos Project Designer with 14 days after the Contract Agreement is approved by the Comptroller. Forward the required forms to the Department of Labor for their action.

1.7 SUBMITTALS

A. Product Data: Catalog sheets, specifications and installation instructions for each item specified.

B. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

C. Manufacturer's installation instructions shall be provided along with product data.

D. Submittals shall be provided individually in the order in which they are specified and tabbed.

E. Asbestos Site Specific Variance Submittals; if a site specific variance is sought submit the following:

1. Prior to submission to NYS DOL, submit variance application to Director's Representative for review and approval.
2. Post submission to NYS DOL, submit one copy of the completed DOSH-751 and DOSH-465 forms.
3. Upon NYS DOL review, submit one copy of the New York State Department of Labor site specific variance decision.

F. Quality Control Submittals:

1. Notification Compliance Data: Within 2 days after notification is sent to the regulatory agencies submit one copy of each notice sent to each regulatory agency (USEPA and DOL).
2. Asbestos Removal Company Data: Name and address of proposed asbestos removal company and abatement contractor license issued by DOL.
3. Asbestos Worker Certification Data: Name and address of proposed asbestos abatement workers and licenses issued by DOL.
4. Work Plan: Submit one copy of the work plan required under Quality Assurance Article 1.08 (C).
5. Waste Transporter Permit: One copy of transporter's current waste transporter permit from NYS DEC (NYS Part 364 Permit).
6. NYS Part 360 Landfill Permit: Copy of NYS Part 360 permit of landfill to be used for ACM disposal shall be licensed to receive asbestos waste by NYS DEC (NYS Part 360 Permit) and by USEPA. Out of state landfills shall provide licenses from local agencies having jurisdiction.
7. Negative Air Pressure Equipment: Copy of manufacturer's and performance data of all units and HEPA filters used.

G. Asbestos Work Closeout Submittals:

1. Waste Shipment Records and Disposal Site Receipts: Copy of waste shipment record and disposal site receipt showing that the ACM has been properly disposed.

    a. Waste shipment record and disposal site receipt must be received within 35 days of the ACM waste leaving the Site. If receipts are not received within the specified time period, the Director's Representative will notify USEPA in writing within 45 days of the ACM waste leaving the Site.

H. Contract Closeout Submittals:

1. Daily Log: Submit copy of the daily air sample analytical reports and a copy of Asbestos Abatement Contractor's Daily project log.
2. Personal Air Monitoring Data: Submit copy of personal air monitoring analytical reports and chain of custody.

1.8 QUALITY ASSURANCE

A. Regulatory Requirements: Comply with the referenced standards.

B. Pre-Work Conference: Before the Work of this Section is scheduled to commence, a conference will be held by the Director's Representative at the Site for the purpose of reviewing the Contract Documents, discussing requirements for the Work, and reviewing the Work procedures.

1. The conference shall be attended by the Contractor, the asbestos removal subcontractor, and the testing laboratory employed by the Director.

C. Work Plan: At the conclusion of the pre-work conference, before the physical abatement Work begins, prepare a detailed work plan.

D. The work plan shall include, but not be limited to, work procedures, types of equipment, details of equipment used, decontamination unit locations, crew size, and emergency procedures for fire and medical emergencies and for failure of containment barriers.

E. If a site specific variance is sought, do not finalize the work plan until the Department of Labor decision is received.

1.9 PROJECT CONDITIONS

A. In addition to the postings required by law, post at the entrance to the abatement area the following documents:

1. Copy of the printed Work plan.
2. Copy of Industrial Code Rule 56.

B. Shut-down of Air Handling System: Complete the Work of this Section within the time limitation allowed for shut-down of the air handling system serving the work area.

1. The air handling system will not be restarted until approval of the air monitoring tests following the last cleaning.
2. If total shut down of the system is not acceptable, follow all regulations for local isolation and provision for temporary HVAC as per DOL regulations.

C. Maintain electric services to those portions of the building and remaining facility not a part of the asbestos abatement work area at all times. Follow all regulations for electric power shut down exemptions as per DOL regulations.

D. Do not obstruct any aisle or passageway so as to reduce its required width as an exit.

1.10 HEALTH AND SAFETY

A. Where in the performance of the work, workers, supervisory personnel or sub-contractors may encounter, disturb, or otherwise function in the immediate vicinity of contaminated items and materials, all personnel shall take appropriate continuous measures as necessary to protect all ancillary building occupants from the potential ACM exposure.

1. Such measures shall include the procedures and methods described herein and shall be in compliance with all applicable regulations of Federal, State and Local agencies.

1.11 FIRE PROTECTION, EMERGENCY EGRESS AND SECURITY

A. Establish emergency and fire exits from the work area containment. Provide first aid kits and two full sets of protective clothing and respirators for use by qualified emergency personnel outside of the work area.

B. Provide a logbook throughout the entire term of the project. All persons who enter the regulated abatement work area or enclosure shall sign the logbook. Document any intrusion or incident in the log book.

1.12 PERSONAL PROTECTIVE CLOTHING AND EQUIPMENT

A. Workers must wear personal protective equipment for all projects as per OSHA and DOL regulations. Provide respiratory protection in accordance with OSHA regulation 1910.134 and ANSI Z88.2.

B. Workers must be trained as per OSHA and DOL requirements, have medical clearance and must have recently received pulmonary function test (PFT) and respirator fit tested by a trained professional.

1. A personal air sampling program shall be in place as required by OSHA.
2. The use of respirators must also follow a complete respiratory protection program as specified by OSHA.

PART 2 - PRODUCTS

2.1 DISPOSAL BAGS

A. Type: Minimum 6 mil thick, black, and preprinted with a Caution Label.

2.2 EQUIPMENT

A. Temporary lighting, heating, hot water heating units, ground fault interrupters, and all other equipment on site shall be UL listed.

B. All electrical equipment shall be in compliance with the National Electric Code, Article 305 - Temporary Wiring.

2.3 GLOVE BAGS

A. Type: Minimum 6 mil thick, clear, fire retardant polyethylene. Select glove bag sizes appropriate for the size and location of the project.

2.4 NEGATIVE AIR PRESSURE UNITS

A. Type: Local exhaust system, capable of maintaining negative air pressure within the containment, and provides for HEPA filtration of efficiency not less than 99.97 percent with 0.3 micron particles. Equip the unit with filter alarms lights and operation time meter.

2.5 PLASTIC SHEETS

A. Type: Minimum 6 mil thick, clear, fire retardant polyethylene.

2.6 RESPIRATORS

A. Type: As approved by the Mine Safety and Health Administration (MSHA), Department of Labor, or the National Institute for Occupational Safety and Health (NIOSH), Department of Health and Human Services.

2.7 VACUUM CLEANERS

A. Type: Vacuums equipped with HEPA filters.

PART 3 - EXECUTION

3.1 ASBESTOS-CONTAINING MATERIAL HANDLING AND REMOVAL PROCEDURES

A. Comply with the standards referenced in Part 1 of this Section.

3.2 CLEAN UP PROCEDURES

A. Comply with the standards referenced in Part 1 of this Section.

3.3 PROJECT AIR SAMPLING, MONITORING AND ANALYSIS

A. Air Sampling and Analysis: The Director will employ the services of an independent testing laboratory to perform air sample monitoring. The laboratory shall use the methods described in standards referenced in Part 1 of this Section.

1. The equipment, duration, flow rate, calibration of equipment, number and location of samples are as per ICR 56-4.
2. Air sampling technician shall be on site to observe and maintain air sampling equipment for the duration of the air sampling collection.
3. Period of time permitted between completion of air sample collection and receipt of results on the project site shall be equal or less than 48 hours.

B. If air samples collected outside the regulated work area indicate airborne fiber concentrations at or above 0.01 fibers per cubic centimeter, or the established background level, whichever is greater, work shall stop immediately for inspection of barriers and negative air ventilation systems. Clean up surfaces outside the regulated work area using HEPA filter equipped vacuums and wet cleaning methods. Work methods shall be altered to reduce fiber concentrations to acceptable levels.

C. Elevated air sample results, if any, along with background and all other air sample results collected during Phase IIA through Phase IIC shall be submitted to the Commissioner of appropriate Asbestos Control Bureau within the same business day of receipt of results.

3.4 FINAL CLEANING AND CLEARANCE PROCEDURES

A. Negative Pressure Ventilation: Negative air pressure machines if used, shall remain in continuous operation during the entire length of the project.

B. Cleaning and Visual Inspection: After first, second, third cleaning and required waiting/settling and drying periods, perform a final visual inspection.

1. Final clearance air sampling shall commence after the waiting/settling and drying time as per ICR 56 has elapsed.

C. Project Monitor Visual Inspection: The Director will employ the services of a DOL certified asbestos project monitor employed by an independent testing laboratory to perform visual inspection as required by ICR 56.

D. Final Clearance Air Sampling: The Director will employ the services of an independent testing laboratory to perform final air sampling.

1. The laboratory shall use the methods described in standards referenced in Part 1 of this Section.
2. The equipment, duration, flow rate, calibration of equipment, number and location of samples are as per ICR 56-4.
3. If initial Post-Abatement (Clearance Air) Monitoring results do not comply with the standards referenced in Part 1 of this Section the Contractor shall either re-clean or order a full set of TEM analysis.

    a. Results of the TEM analysis will be conclusive, and if the results do not comply with the standards referenced in Part 1 of this Section, the Contractor shall re-clean and additional full set of air samples will be collected and analyzed until the standards are met.
    b. All satisfactory PCM clearance air sample results along with background air sample results, if they are greater than or equal to 0.01 fibers per cubic centimeter, shall be submitted to the Commissioner of appropriate Asbestos Control Bureau within two business days of receipt of satisfactory clearance air results.
    c. All satisfactory TEM results of previously unsatisfactory PCM clearance air sample results, along with the unsatisfactory PCM results shall be

submitted to the Commissioner of appropriate Asbestos Control Bureau within two business days of receipt of satisfactory clearance air results.

4. Prior to removal of isolation barriers the Director's Representative at the site will receive an affidavit from the air monitoring laboratory certifying the final air samples comply with the standards referenced in Part 1 of this Section.

E. Dismantling of Regulated Abatement Work Area:

1. Remove all tools and equipment after proper decontamination as per Part 1 of this section.
2. Dismantle and remove each tent enclosure and air lock and any barriers only after final clearance air monitoring has been performed and satisfactory results obtained.
3. All remaining polyethylene, duct tape, expandable foam and other barrier materials shall be bagged, wrapped, containerized and labeled as asbestos waste.
4. Remove all temporary hard walled barriers from site.
5. Dismantle any remote decontamination units and plastic sheeting shall be disposed as asbestos waste.
6. Remove all waste generated to the holding area, lockable trailer or dumpster.
7. Contractor's Supervisor shall certify in writing to the Director that abatement work is complete and no debris/residue remains.

3.5 DISPOSAL OF ASBESTOS-CONTAINING MATERIAL AND RELATED DEBRIS

A. Remove all waste generated as part of the asbestos project from the project site within ten calendar days from the site after completion of Phase IIC of the project or within one day of the waste disposal container/trailer becomes full, whichever occurs first.

B. Transport and dispose of all the asbestos-containing waste, related debris, and waste water to the approved disposal site.

C. All generated waste removed from the site must be documented, accounted for and disposed of in compliance with the requirements of USEPA NESHAP.

D. Comply also with the standards referenced in Part 1 of this Section.

3.6 RESTORATION

A. Remove temporary decontamination facilities and restore area designated for these facilities to its original condition or better.

B. Where existing work is damaged or contaminated, restore work to its original condition or better.

END OF SECTION 028213

SECTION 033000 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Cast-in-place concrete, including concrete materials, mixture design, placement procedures, and finishes.
2. Controlled low-strength material.

B. Related Requirements:

1. Section 031000 "Concrete Forming and Accessories" for form-facing materials, form liners, insulating concrete forms, and waterstops.
2. Section 032000 "Concrete Reinforcing" for steel reinforcing bars and welded-wire reinforcement.

1.2 DEFINITIONS

A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash, slag cement, other pozzolans, and silica fume; materials subject to compliance with requirements.

B. Water/Cement Ratio (w/cm): The ratio by weight of water to cementitious materials.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. Require representatives of each entity directly concerned with cast-in-place concrete to attend, including the following:

a. Contractor's superintendent.
b. Independent testing agency responsible for concrete design mixtures.
c. Ready-mix concrete manufacturer.
d. Concrete Subcontractor.
e. Special concrete finish Subcontractor.

2. Review the following:

a. Special inspection and testing and inspecting agency procedures for field quality control.
b. Construction joints, control joints, isolation joints, and joint-filler strips.
c. Semirigid joint fillers.

d. Vapor-retarder installation.
e. Anchor rod and anchorage device installation tolerances.
f. Cold and hot weather concreting procedures.
g. Concrete finishes and finishing.
h. Curing procedures.
i. Forms and form-removal limitations.
j. Shoring and reshoring procedures.
k. Methods for achieving specified floor and slab flatness and levelness.
l. Floor and slab flatness and levelness measurements.
m. Concrete repair procedures.
n. Concrete protection.
o. Initial curing and field curing of field test cylinders (ASTM C31)
p. Protection of field cured field test cylinders.

1.4 SUBMITTALS

A. General: Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Product Data: For each of the following.

1. Portland cement.
2. Fly ash.
3. Aggregates.
4. Admixtures:

    a. Include limitations of use, including restrictions on cementitious materials, supplementary cementitious materials, air entrainment, aggregates, temperature at time of concrete placement, relative humidity at time of concrete placement, curing conditions, and use of other admixtures.

5. Vapor retarders.
6. Floor and slab treatments.
7. Curing materials.

    a. Include documentation from color pigment manufacturer, indicating that proposed methods of curing are recommended by color pigment manufacturer.

8. Joint fillers.
9. Repair materials.

C. Submit an Environmental Product Declaration (EPD) from the manufacturer for each concrete mix within this specification section, if available. A statement of the contractor's good faith effort to obtain the EPD shall be provided if not available.

1. Manufacturer-provided EPDs must be Product Specific Type III (Third-Party Reviewed), in adherence with ISO 14025 *Environmental labels and declarations*, ISO 14044 *Environmental management – Life cycle assessment*, and ISO 21930 *Core rules for environmental product declarations of construction products and services*.

D. Design Mixtures: For each concrete mixture, include the following:

1. Mixture identification.
2. Minimum 28-day compressive strength.
3. Durability exposure class.
4. Maximum w/cm.
5. Calculated equilibrium unit weight, for lightweight concrete.
6. Slump limit.
7. Air content.
8. Nominal maximum aggregate size.
9. Steel-fiber reinforcement content.
10. Synthetic micro-fiber content.
11. Indicate amounts of mixing water to be withheld for later addition at Project site if permitted.
12. Include manufacturer's certification that permeability-reducing admixture is compatible with mix design.
13. Include certification that dosage rate for permeability-reducing admixture matches dosage rate used in performance compliance test.
14. Intended placement method.
15. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

E. Shop Drawings:

1. Construction Joint Layout: Indicate proposed construction joints required to construct the structure.

    a. Location of construction joints is subject to approval of the Director’s Representative.

F. Samples: For vapor retarder.

G. Concrete Schedule: For each location of each Class of concrete indicated in "Concrete Mixtures" Article, including the following:

1. Concrete Class designation.
2. Location within Project.
3. Exposure Class designation.
4. Formed Surface Finish designation and final finish.
5. Final finish for floors.
6. Curing process.
7. Floor treatment if any.

H. Qualification Data: For the following:

1. Installer: Include copies of applicable ACI certificates.
2. Ready-mixed concrete manufacturer.
3. Testing agency: Include copies of applicable ACI certificates.

I. Material Certificates: For each of the following, signed by manufacturers:

1. Cementitious materials.
2. Admixtures.
3. Curing compounds.
4. Floor and slab treatments.
5. Bonding agents.
6. Adhesives.
7. Vapor retarders.
8. Joint-filler strips.
9. Repair materials.

J. Material Test Reports: For the following, from a qualified testing agency:

1. Portland cement.
2. Fly ash.
3. Slag cement.
4. Blended hydraulic cement.
5. Silica fume.
6. Performance-based hydraulic cement.
7. Aggregates.
8. Admixtures:

a. Permeability-Reducing Admixture: Include independent test reports, indicating compliance with specified requirements, including dosage rate used in test.

K. Floor surface flatness and levelness measurements report, indicating compliance with specified tolerances.

L. Research Reports:

1. For concrete admixtures in accordance with ICC's Acceptance Criteria AC198.
2. For sheet vapor retarder/termite barrier, showing compliance with ICC AC380.

M. Preconstruction Test Reports: For each mix design.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: A qualified installer who employs Project personnel qualified as an ACI-certified Flatwork Technician and Finisher and a supervisor who is a certified ACI Flatwork Concrete Finisher/Technician or an ACI Concrete Flatwork Technician with experience installing and finishing concrete, incorporating permeability-reducing admixtures.

1. Post-Installed Concrete Anchors Installers: ACI-certified Adhesive Anchor Installer.

B. Ready-Mixed Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C94 requirements for production facilities and equipment.

1. Manufacturer certified in accordance with NRMCA's "Certification of Ready Mixed Concrete Production Facilities."

C. Laboratory Testing Agency Qualifications: A testing agency qualified in accordance with ASTM C1077 and ASTM E329 for testing indicated and employing an ACI-certified Concrete Quality Control Technical Manager.

1. Personnel performing laboratory tests shall be an ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician, Grade I. Testing agency laboratory supervisor shall be an ACI-certified Concrete Laboratory Testing Technician, Grade II.

D. Field Quality Control Testing Agency Qualifications: An independent agency, acceptable to authorities having jurisdiction, qualified in accordance with ASTM C1077 and ASTM E329 for testing indicated.

1. Personnel conducting field tests shall be qualified as an ACI Concrete Field Testing Technician, Grade 1, in accordance with ACI CPP 610.1 or an equivalent certification program.

1.6 PRECONSTRUCTION TESTING

A. Preconstruction Testing Service: Engage a qualified testing agency to perform preconstruction testing on each concrete mixture.

1. Include the following information in each test report:

a. Admixture dosage rates.
b. Slump.
c. Air content.
d. Seven-day compressive strength.
e. 28-day compressive strength.
f. Permeability.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Comply with ASTM C94 and ACI 301.

1.8 FIELD CONDITIONS

A. Cold-Weather Placement: Comply with ACI 301 and ACI 306.1 and as follows.

1. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
2. When average high and low temperature is expected to fall below 40 deg F for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.
3. Do not use frozen materials or materials containing ice or snow.
4. Do not place concrete in contact with surfaces less than 35 deg F, other than reinforcing steel.

5. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.

B. Hot-Weather Placement: Comply with ACI 301 and ACI 305.1, and as follows:

1. Maintain concrete temperature at time of discharge to not exceed 95 deg F.
2. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

PART 2 - PRODUCTS

2.1 CONCRETE, GENERAL

A. ACI Publications: Comply with ACI 301unless modified by requirements in the Contract Documents.

2.2 CONCRETE MATERIALS

A. Source Limitations:

1. Obtain all concrete mixtures from a single ready-mixed concrete manufacturer for entire Project.
2. Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant.
3. Obtain aggregate from single source.
4. Obtain each type of admixture from single source from single manufacturer.

B. Cementitious Materials:

1. Portland Cement: ASTM C150, Type I or Type II**,** gray.
2. Fly Ash: ASTM C618, Class F.

C. Normal-Weight Aggregates: ASTM C33, Class 3S coarse aggregate or better, graded. Provide aggregates from a single source.

1. Alkali-Silica Reaction: Comply with one of the following:

a. Expansion Result of Aggregate: Not more than 0.04 percent at one-year when tested in accordance with ASTM C1293.
b. Expansion Results of Aggregate and Cementitious Materials in Combination: Not more than 0.10 percent at an age of 16 days when tested in accordance with ASTM C1567.
c. Alkali Content in Concrete: Not more than 4 lb./cu. yd. for moderately reactive aggregate or 3 lb./cu. yd. for highly reactive aggregate, when tested in accordance with ASTM C1293 and categorized in accordance with ASTM C1778, based on alkali content being calculated in accordance with ACI 301.

2. Maximum Coarse-Aggregate Size: 3/4 inches nominal.

3. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.

D. Air-Entraining Admixture: ASTM C260.

E. Chemical Admixtures: Certified by manufacturer to be compatible with other admixtures that do not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride in steel-reinforced concrete.

1. Water-Reducing Admixture: ASTM C494, Type A.
2. Retarding Admixture: ASTM C494, Type B.
3. Water-Reducing and -Retarding Admixture: ASTM C494, Type D.
4. High-Range, Water-Reducing Admixture: ASTM C494, Type F.
5. High-Range, Water-Reducing and -Retarding Admixture: ASTM C494, Type G.
6. Plasticizing and Retarding Admixture: ASTM C1017, Type II.
7. Set-Accelerating Corrosion-Inhibiting Admixture: Commercially formulated, anodic inhibitor or mixed cathodic and anodic inhibitor; capable of forming a protective barrier and minimizing chloride reactions with steel reinforcement in concrete and complying with ASTM C494, Type C.

    a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

        1) BASF Corporation.
        2) Euclid Chemical Company (The); an RPM company.
        3) GCP Applied Technologies Inc.
        4) Sika Corporation.

8. Non-Set-Accelerating Corrosion-Inhibiting Admixture: Commercially formulated, non-set-accelerating, anodic inhibitor or mixed cathodic and anodic inhibitor; capable of forming a protective barrier and minimizing chloride reactions with steel reinforcement in concrete.

    a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

        1) Aggregate Industries (US); Lafarge.
        2) Barrier-Bac; Inteplast Group.
        3) BASF Corporation.
        4) Sika Corporation.

9. Permeability-Reducing Admixture: ASTM C494, Type S, hydrophilic, permeability-reducing crystalline admixture, capable of reducing water absorption of concrete exposed to hydrostatic pressure (PRAH).

    a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

        1) AQUAFIN, Inc.

2) Kryton International Inc.
3) Xypex Chemical Corporation.

b. Permeability: No leakage when tested in accordance with U.S. Army Corps of Engineers CRD C48 at a hydraulic pressure of 200 psi for 14 days.

F. Water and Water Used to Make Ice: ASTM C94, potable

2.3 VAPOR RETARDERS

A. Sheet Vapor Retarder, Class A: ASTM E1745, Class A; not less than 15 mils thick. Include manufacturer's recommended adhesive or pressure-sensitive tape.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Barrier-Bac; Inteplast Group.
b. ISI Building Products.
c. Raven Industries, Inc.
d. Reef Industries, Inc.
e. Stego Industries, LLC.

2.4 LIQUID FLOOR TREATMENTS

A. Penetrating Liquid Floor Treatment: Clear, chemically reactive, waterborne solution of inorganic silicate or siliconate materials and proprietary components; odorless; that penetrates, hardens, and densifies concrete surfaces.

2.5 CURING MATERIALS

A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.

B. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. when dry.

C. Moisture-Retaining Cover: ASTM C171, polyethylene film burlap-polyethylene sheet.

1. Color:

a. Ambient Temperature Below 50 deg F: Black.
b. Ambient Temperature between 50 deg F and 85 deg F: Any color.
c. Ambient Temperature Above 85 deg F: White.

D. Curing Paper: Eight-feet- wide paper, consisting of two layers of fibered kraft paper laminated with double coating of asphalt.

E. Water: Potable or complying with ASTM C1602.

F. Clear, Waterborne, Membrane-Forming, Dissipating Curing Compound: ASTM C309, Type 1, Class B.

2.6 RELATED MATERIALS

A. Expansion- and Isolation-Joint-Filler Strips: ASTM D1751, asphalt-saturated cellulosic fiber or ASTM D1752, cork or self-expanding cork.

B. Bonding Agent: ASTM C1059, Type II, nonredispersible, acrylic emulsion or styrene butadiene.

C. Floor Slab Protective Covering: Eight-feet- wide cellulose fabric.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. McTech Group, Inc.

2.7 REPAIR MATERIALS

A. Repair Underlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch and that can be feathered at edges to match adjacent floor elevations.

1. Cement Binder: ASTM C150 portland cement or hydraulic or blended hydraulic cement, as defined in ASTM C219.
2. Primer: Product of underlayment manufacturer recommended for substrate, conditions, and application.
3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand, as recommended by underlayment manufacturer.
4. Compressive Strength: Not less than 4100 psi at 28 days when tested in accordance with ASTM C109.

B. Repair Overlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/4 inch and that can be filled in over a scarified surface to match adjacent floor elevations.

1. Cement Binder: ASTM C150 portland cement or hydraulic or blended hydraulic cement, as defined in ASTM C219.
2. Primer: Product of topping manufacturer recommended for substrate, conditions, and application.
3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by topping manufacturer.
4. Compressive Strength: Not less than 5000 psi at 28 days when tested in accordance with ASTM C109.

2.8 CONCRETE MIXTURES, GENERAL

A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, in accordance with ACI 301.

1. Use a qualified testing agency for preparing and reporting proposed mixture designs, based on laboratory trial mixtures.

B. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement in concrete as follows:

1. Fly Ash or Other Pozzolans: 25 percent by mass.
2. Slag Cement: 50 percent by mass.
3. Silica Fume: 10 percent by mass.
4. Total of Fly Ash or Other Pozzolans, Slag Cement, and Silica Fume: 50 percent by mass, with fly ash or pozzolans not exceeding 25 percent by mass and silica fume not exceeding 10 percent by mass.
5. Total of Fly Ash or Other Pozzolans and Silica Fume: 35 percent by mass with fly ash or pozzolans not exceeding 25 percent by mass and silica fume not exceeding 10 percent by mass.

C. Admixtures: Use admixtures in accordance with manufacturer's written instructions.

1. Use water-reducing admixture in concrete, as required, for placement and workability.
2. Use water-reducing and -retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
3. Use water-reducing admixture in pumped concrete,.
4. Use corrosion-inhibiting admixture in concrete mixtures where indicated.
5. Use permeability-reducing admixture in concrete mixtures where indicated.

D. Color Pigment: Add color pigment to concrete mixture in accordance with manufacturer's written instructions and to result in hardened concrete color consistent with approved mockup.

2.9 CONCRETE MIXTURES

A. Class F2: Normal-weight concrete used for footings, foundation walls, entry apron slabs, equipment pads, retaining walls, and bollard foundations.

1. Exposure Class: ACI 318 F2.
2. Minimum Compressive Strength: 4500 psi at 28 days.
3. Maximum w/cm: 0.45.
4. Slump Limit: 8 inches, plus or minus 1 inch for concrete with verified slump of 3 inches plus or minus 1 inch before adding high-range water-reducing admixture or plasticizing admixture at Project site.
5. Slump Flow Limit: 30 inches, plus or minus 2.5 inches.
6. Air Content:

    a. Exposure Classes F2: 6 percent, plus or minus 1.5 percent at point of delivery for concrete containing 3/4-inch nominal maximum aggregate size.

7. Limit water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.

B. Class C2: Normal-weight concrete used for interior slabs-on-ground and elevated slab on deck.

1. Exposure Class: ACI 318 C2.
2. Minimum Compressive Strength: 4500 psi at 28 days.
3. Maximum w/cm: 0.45.
4. Slump Limit: 8 inches, plus or minus 1 inch for concrete with verified slump of 3 inches plus or minus 1 inch before adding high-range water-reducing admixture or plasticizing admixture at Project site.
5. Slump Flow Limit: 30 inches, plus or minus 2.5 inches.
6. Air Content:

    a. Do not use an air-entraining admixture or allow total air content to exceed 3 percent for concrete used in trowel-finished floors.

7. Limit water-soluble, chloride-ion content in hardened concrete to 0.30 percent by weight of cement.

2.10 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete in accordance with ASTM C94 and ASTM C1116, and furnish batch ticket information.

B. Project-Site Mixing: Measure, batch, and mix concrete materials and concrete in accordance with ASTM C94. Mix concrete materials in appropriate drum-type batch machine mixer.

1. For mixer capacity of 1 cu. yd. or smaller, continue mixing at least 1-1/2 minutes, but not more than five minutes after ingredients are in mixer, before any part of batch is released.
2. For mixer capacity larger than 1 cu. yd., increase mixing time by 15 seconds for each additional 1 cu. yd..
3. Provide batch ticket for each batch discharged and used in the Work, indicating Project identification name and number, date, mixture type, mixture time, quantity, and amount of water added. Record approximate location of final deposit in structure.

2.11 GLOBAL WARMING POTENTIAL LIMITS

A. The Global Warming Potential (GWP) of standard ready-mix concrete mixes shall meet the maximum limits outlined in in the table below. GWP of each mix will be verified through the submission of an EPD.

Maximum Global Warming Potential (GWP) Limits

for Low Embodied Carbon Concrete

Specified compressive strength (f'c in PSI)	Maximum Global Warming Potential Limits for Low Embodied Carbon Concrete (kilograms of carbon dioxide equivalent per cubic yard - CO_2e kg/y^3)
0 - 2500	275
2501 - 3000	302
3001 - 4000	360
4001 - 5000	434
5001 - 6000	458
6001 - 8000	541
8000+	N/A

B. The maximum GWP limits are not applicable to quick cure concrete, concrete designed to cure to its design strength quicker than the standard 28 days.

2.12 CONTROLLED LOW-STRENGTH MATERIAL

A. Controlled Low-Strength Material (Flowable Fill): Self-compacting, flowable concrete material produced from the following:

1. Portland Cement: ASTM C 150, Type II.
2. Fly Ash: ASTM C 618, Class C or F.
3. Normal-Weight Aggregate: ASTM C 33, 3/4-inch nominal maximum aggregate size.
4. Foaming Agent: ASTM C 869.
5. Water: ASTM C 94/C 94M.
6. Air-Entraining Admixture: ASTM C 260.

B. Produce conventional-weight, controlled low-strength material with 80 to 140 psi compressive strength when tested according to ASTM C 495

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verification of Conditions:

1. Before placing concrete, verify that installation of concrete forms, accessories, and reinforcement, and embedded items is complete and that required inspections have been performed.
2. Do not proceed until unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Provide reasonable auxiliary services to accommodate field testing and inspections, acceptable to testing agency, including the following:

1. Daily access to the Work.
2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Secure space for storage, initial curing, and field curing of test samples, including source of water and continuous electrical power at Project site during site curing period for test samples.
4. Security and protection for test samples and for testing and inspection equipment at Project site.

3.3 INSTALLATION OF EMBEDDED ITEMS

A. Place and secure anchorage devices and other embedded items required for adjoining Work that is attached to or supported by cast-in-place concrete.

1. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
2. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of ANSI/AISC 303.
3. Install reglets to receive waterproofing and to receive through-wall flashings in outer face of concrete frame at exterior walls, where flashing is shown at lintels, shelf angles, and other conditions.

3.4 INSTALLATION OF VAPOR RETARDER

A. Sheet Vapor Retarders: Place, protect, and repair sheet vapor retarder in accordance with ASTM E1643 and manufacturer's written instructions.

1. Install vapor retarder with longest dimension parallel with direction of concrete pour.
2. Face laps away from exposed direction of concrete pour.
3. Lap vapor retarder over footings and grade beams not less than 6 inches, sealing vapor retarder to concrete.
4. Lap joints 6 inches and seal with manufacturer's recommended tape.
5. Terminate vapor retarder at the top of floor slabs, grade beams, and pile caps, sealing entire perimeter to floor slabs, grade beams, foundation walls, or pile caps.
6. Seal penetrations in accordance with vapor retarder manufacturer's instructions.
7. Protect vapor retarder during placement of reinforcement and concrete.

    a. Repair damaged areas by patching with vapor retarder material, overlapping damages area by 6 inches on all sides, and sealing to vapor retarder.

B. Bituminous Vapor Retarders: Place, protect, and repair bituminous vapor retarder in accordance with manufacturer's written instructions.

3.5 JOINTS

A. Construct joints true to line, with faces perpendicular to surface plane of concrete.

B. Construction Joints: Coordinate with floor slab pattern and concrete placement sequence.

1. Install so strength and appearance of concrete are not impaired, at locations indicated on Drawings or as approved by Director's Representative.
2. Place joints perpendicular to main reinforcement.

    a. Continue reinforcement across construction joints unless otherwise indicated.
    b. Do not continue reinforcement through sides of strip placements of floors and slabs.

3. Form keyed joints as indicated. Embed keys at least 1-1/2 inches into concrete.
4. Locate joints for beams, slabs, joists, and girders at third points of spans. Offset joints in girders a minimum distance of twice the beam width from a beam-girder intersection.
5. Locate horizontal joints in walls and columns at underside of floors, slabs, beams, and girders and at the top of footings or floor slabs.
6. Space vertical joints in walls as indicated on Drawings. Unless otherwise indicated on Drawings, locate vertical joints beside piers integral with walls, near corners, and in concealed locations where possible.
7. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
8. Use epoxy-bonding adhesive at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.

C. Control Joints in Slabs-on-Ground: Form weakened-plane control joints, sectioning concrete into areas as indicated. Construct control joints for a depth equal to at least one-fourth of concrete thickness as follows:

1. Grooved Joints: Form control joints after initial floating by grooving and finishing each edge of joint to a radius of 1/8 inch. Repeat grooving of control joints after applying surface finishes. Eliminate groover tool marks on concrete surfaces.
2. Sawed Joints: Form control joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- wide joints into concrete when cutting action does not tear, abrade, or otherwise damage surface and before concrete develops random cracks.

D. Isolation Joints in Slabs-on-Ground: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.

1. Extend joint-filler strips full width and depth of joint, terminating flush with finished concrete surface unless otherwise indicated on Drawings.
2. Terminate full-width joint-filler strips not less than 1/2 inch or more than 1 inch below finished concrete surface, where joint sealants, specified in Section 079200 "Joint Sealants," are indicated.
3. Install joint-filler strips in lengths as long as practicable. Where more than one length is required, lace or clip sections together.

E. Doweled Joints:

1. Install dowel bars and support assemblies at joints where indicated on Drawings.
2. Lubricate or asphalt coat one-half of dowel bar length to prevent concrete bonding to one side of joint.

F. Dowel Plates: Install dowel plates at joints where indicated on Drawings.

3.6 CONCRETE PLACEMENT

A. Before placing concrete, verify that installation of formwork, reinforcement, embedded items, and vapor retarder is complete and that required inspections are completed.

1. Immediately prior to concrete placement, inspect vapor retarder for damage and deficient installation, and repair defective areas.
2. Provide continuous inspection of vapor retarder during concrete placement and make necessary repairs to damaged areas as Work progresses.

B. Notify Director's Representative and testing and inspection agencies 24 hours prior to commencement of concrete placement.

C. Do not add water to concrete during delivery, at Project site, or during placement unless approved by Director's Representative in writing, but not to exceed the amount indicated on the concrete delivery ticket.

1. Do not add water to concrete after adding high-range water-reducing admixtures to mixture.

D. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301, but not to exceed the amount indicated on the concrete delivery ticket.

1. Do not add water to concrete after adding high-range water-reducing admixtures to mixture.

E. Conform to the discharge limitations and requirements of ASTM C94 in the operation of truck mixers and agitators.

F. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete is placed on concrete that has hardened enough to cause seams or planes of weakness.

1. If a section cannot be placed continuously, provide construction joints as indicated.
2. Deposit concrete to avoid segregation.
3. Deposit concrete in horizontal layers of depth not to exceed formwork design pressures and in a manner to avoid inclined construction joints.
4. Do not allow discharged concrete to freefall more than 4 feet.
5. Consolidate placed concrete with mechanical vibrating equipment in accordance with ACI 301.

    a. Do not use vibrators to transport concrete inside forms.
    b. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches into preceding layer.

c. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity.
d. At each insertion, limit duration of vibration to time necessary to consolidate concrete, and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.

G. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.

1. Do not place concrete floors and slabs in a checkerboard sequence.
2. Consolidate concrete during placement operations, so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
3. Maintain reinforcement in position on chairs during concrete placement.
4. Screed slab surfaces with a straightedge and strike off to correct elevations.
5. Level concrete, cut high areas, and fill low areas.
6. Slope surfaces uniformly to drains where required.
7. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface.
8. Do not further disturb slab surfaces before starting finishing operations.

H. Pumping Concrete

1. When pumping concrete, the lubrication materials within the delivery line shall not be discharged into the forms.
2. The inside diameter of the delivery lines shall be the greater of 5 inches or 3 times the maximum size of the coarse aggregate.

3.7 FINISHING FORMED SURFACES

A. As-Cast Surface Finishes:

1. ACI 301 Surface Finish SF-1.0: As-cast concrete texture imparted by form-facing material.

a. Patch voids larger than 1-1/2 inches wide or 1/2 inch deep.
b. Remove projections larger than 1 inch.
c. Tie holes do not require patching.
d. Surface Tolerance: ACI 117 Class D.
e. Apply to concrete surfaces not exposed to public view.

2. ACI 301Surface Finish SF-2.0: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams.

a. Patch voids larger than 3/4 inch wide or 1/2 inch deep.
b. Remove projections larger than 1/4 inch.
c. Patch tie holes.
d. Surface Tolerance: ACI 117 Class B.
e. Locations: Apply to concrete surfaces exposed to public view, or to be covered with a coating or covering material applied directly to concrete.

B. Rubbed Finish: Apply the following to as cast surface finishes where indicated on Drawings:

1. Smooth-Rubbed Finish:

    a. Perform no later than one day after form removal.
    b. Moisten concrete surfaces and rub with carborundum brick or another abrasive until producing a uniform color and texture.
    c. If sufficient cement paste cannot be drawn from the concrete by the rubbing process, use a grout made from the same cementitious materials used in the in-place concrete.
    d. Maintain required patterns or variances as shown on Drawings or to match field sample panels mockups.

2. Cork-Floated Finish:

    a. Mix 1 part portland cement to 1 part fine sand, complying with ASTM C144 or ASTM C404, by volume, with sufficient water to produce a mixture with the consistency of thick paint.
    b. Mix 1 part portland cement and 1 part fine sand with sufficient water to produce a mixture of stiff grout. Add white portland cement in amounts determined by trial patches, so color of dry grout matches adjacent surfaces.
    c. Wet concrete surfaces.
    d. Compress grout into voids by grinding surface.
    e. In a swirling motion, finish surface with a cork float.
    f. Maintain required patterns or variances as shown on Drawings or to match design reference sample.

3.8 FINISHING FLOORS AND SLABS

A. Comply with ACI 302.1R recommendations for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.

B. Scratch Finish:

1. While still plastic, texture concrete surface that has been screeded and bull-floated or darbied.
2. Use stiff brushes, brooms, or rakes to produce a profile depth of 1/4 inch in one direction.

3. Apply scratch finish to surfaces to receive concrete floor toppings.

C. Float Finish:

1. When bleedwater sheen has disappeared and concrete surface has stiffened sufficiently to permit operation of specific float apparatus, consolidate concrete surface with power-driven floats or by hand floating if area is small or inaccessible to power-driven floats.
2. Repeat float passes and restraightening until surface is left with a uniform, smooth, granular texture and complies with ACI 117 tolerances for conventional concrete.

3. Apply float finish to surfaces to receive trowel finish.

D. Trowel Finish:

1. After applying float finish, apply first troweling and consolidate concrete by hand or power-driven trowel.
2. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance.
3. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings.
4. Do not add water to concrete surface.
5. Do not apply hard-troweled finish to concrete, which has a total air content greater than 3 percent.
6. Apply a trowel finish to surfaces exposed to view.
7. Finish surfaces to the following tolerances, in accordance with ASTM E1155, for a randomly trafficked floor surface:

    a. Slabs on Ground:

        1) Finish and measure surface so gap at any point between concrete surface and an unleveled, freestanding, 10-ft.- long straightedge resting on two high spots and placed anywhere on the surface does not exceed 1/8 inch
        2) Specified overall values of flatness, FF 25; and of levelness, FL 20; with minimum local values of flatness, FF 17; and of levelness, FL 15.
        3) Specified overall values of flatness, FF 35; and of levelness, FL 25; with minimum local values of flatness, FF 24; and of levelness, FL 17.
        4) Specified overall values of flatness, FF 45; and of levelness, FL 35; with minimum local values of flatness, FF 30; and of levelness, FL 24.
        5) Specified Overall Value (SOV): FF 50 and FL 25 with minimum local value (MLV): FF 40 and FL 17.
        6) Specified Overall Value (SOV): FF 25 and FL 20 with minimum local value (MLV): FF 17 and FL 15.

E. Broom Finish: Apply a broom finish to exterior concrete

1. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route.
2. Coordinate required final finish with Director’s Representative before application.

3.9 INSTALLATION OF MISCELLANEOUS CONCRETE ITEMS

A. Filling In:

1. Fill in holes and openings left in concrete structures after Work of other trades is in place unless otherwise indicated.
2. Mix, place, and cure concrete, as specified, to blend with in-place construction.
3. Provide other miscellaneous concrete filling indicated or required to complete the Work.

B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and by steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.

3.10 CONCRETE CURING

A. Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.

1. Comply with ACI 301 and ACI 306.1 for cold weather protection during curing.
2. Comply with ACI 301 and ACI 305.1 for hot-weather protection during curing.
3. Maintain moisture loss no more than 0.2 lb/sq. ft. x h before and during finishing operations.

B. Curing Formed Surfaces: Comply with ACI 308.1 as follows:

1. Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces.
2. Cure concrete containing color pigments in accordance with color pigment manufacturer's instructions.
3. If forms remain during curing period, moist cure after loosening forms.
4. If removing forms before end of curing period, continue curing for remainder of curing period, as follows:

    a. Continuous Fogging: Maintain standing water on concrete surface until final setting of concrete.
    b. Continuous Sprinkling: Maintain concrete surface continuously wet.
    c. Absorptive Cover: Pre-dampen absorptive material before application; apply additional water to absorptive material to maintain concrete surface continuously wet.
    d. Water-Retention Sheeting Materials: Cover exposed concrete surfaces with sheeting material, taping, or lapping seams.
    e. Membrane-Forming Curing Compound: Apply uniformly in continuous operation by power spray or roller in accordance with manufacturer's written instructions.

        1) Recoat areas subject to heavy rainfall within three hours after initial application.
        2) Maintain continuity of coating and repair damage during curing period.

C. Curing Unformed Surfaces: Comply with ACI 308.1 as follows:

1. Begin curing immediately after finishing concrete.
2. Interior Concrete Floors:

    a. Floors to Receive Floor Coverings Specified in Other Sections: Contractor has option of the following:

        1) Absorptive Cover: As soon as concrete has sufficient set to permit application without marring concrete surface, install prewetted absorptive cover over entire area of floor.

            a) Lap edges and ends of absorptive cover not less than 12-inches.
            b) Maintain absorptive cover water saturated, and in place, for duration of curing period, but not less than seven days.

2) Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive.

a) Immediately repair any holes or tears during curing period, using cover material and waterproof tape.
b) Cure for not less than seven days.

3) Ponding or Continuous Sprinkling of Water: Maintain concrete surfaces continuously wet for not less than seven days, utilizing one, or a combination of, the following:

a) Water.
b) Continuous water-fog spray.

b. Floors to Receive Polished Finish: Contractor has option of the following:

1) Absorptive Cover: As soon as concrete has sufficient set to permit application without marring concrete surface, install prewetted absorptive cover over entire area of floor.

a) Lap edges and ends of absorptive cover not less than 12 inches.
b) Maintain absorptive cover water saturated, and in place, for duration of curing period, but not less than seven days.

2) Ponding or Continuous Sprinkling of Water: Maintain concrete surfaces continuously wet for not less than seven days, utilizing one, or a combination of, the following:

a) Water.
b) Continuous water-fog spray.

c. Floors to Receive Curing Compound:

1) Apply uniformly in continuous operation by power spray or roller in accordance with manufacturer's written instructions.
2) Recoat areas subjected to heavy rainfall within three hours after initial application.
3) Maintain continuity of coating, and repair damage during curing period.
4) Removal: After curing period has elapsed, remove curing compound without damaging concrete surfaces by method recommended by curing compound manufacturer

3.11 TOLERANCES

A. Conform to ACI 117.

3.12 JOINT FILLING

A. Prepare, clean, and install joint filler in accordance with manufacturer's written instructions.

1. Defer joint filling until concrete has aged at least six month(s).
2. Do not fill joints until construction traffic has permanently ceased.

B. Remove dirt, debris, saw cuttings, curing compounds, and sealers from joints; leave contact faces of joints clean and dry.

C. Install semirigid joint filler full depth in saw-cut joints and at least 2 inches deep in formed joints.

D. Overfill joint, and trim joint filler flush with top of joint after hardening.

3.13 CONCRETE SURFACE REPAIRS

A. Defective Concrete:

1. Repair and patch defective areas when approved by Director’s Representative.
2. Remove and replace concrete that cannot be repaired and patched to Director’s Representative's approval.

B. Patching Mortar: Mix dry-pack patching mortar, consisting of 1 part portland cement to 2-1/2 parts fine aggregate passing a No. 16 sieve, using only enough water for handling and placing.

C. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.

1. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/2 inch in any dimension to solid concrete.

a. Limit cut depth to 3/4 inch.
b. Make edges of cuts perpendicular to concrete surface.
c. Clean, dampen with water, and brush-coat holes and voids with bonding agent.
d. Fill and compact with patching mortar before bonding agent has dried.
e. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.

2. Repair defects on surfaces exposed to view by blending white portland cement and standard portland cement, so that, when dry, patching mortar matches surrounding color.

a. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching.
b. Compact mortar in place and strike off slightly higher than surrounding surface.

3. Repair defects on concealed formed surfaces that will affect concrete's durability and structural performance as determined by Director’s Representative.

D. Repairing Unformed Surfaces:

1. Test unformed surfaces, such as floors and slabs, for finish, and verify surface tolerances specified for each surface.

    a. Correct low and high areas.
    b. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.

2. Repair finished surfaces containing surface defects, including spalls, popouts, honeycombs, rock pockets, crazing, and cracks in excess of 0.01 inch wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.
3. After concrete has cured at least 14 days, correct high areas by grinding.
4. Correct localized low areas during, or immediately after, completing surface-finishing operations by cutting out low areas and replacing with patching mortar.

    a. Finish repaired areas to blend into adjacent concrete.

5. Correct other low areas scheduled to receive floor coverings with a repair underlayment.

    a. Prepare, mix, and apply repair underlayment and primer in accordance with manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.
    b. Feather edges to match adjacent floor elevations.

6. Correct other low areas scheduled to remain exposed with repair topping.

    a. Cut out low areas to ensure a minimum repair topping depth of 1/4 inch to match adjacent floor elevations.
    b. Prepare, mix, and apply repair topping and primer in accordance with manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.

7. Repair defective areas, except random cracks and single holes 1 inch or less in diameter, by cutting out and replacing with fresh concrete.

    a. Remove defective areas with clean, square cuts, and expose steel reinforcement with at least a 3/4-inch clearance all around.
    b. Dampen concrete surfaces in contact with patching concrete and apply bonding agent.
    c. Mix patching concrete of same materials and mixture as original concrete, except without coarse aggregate.
    d. Place, compact, and finish to blend with adjacent finished concrete.
    e. Cure in same manner as adjacent concrete.

8. Repair random cracks and single holes 1 inch or less in diameter with patching mortar.

    a. Groove top of cracks and cut out holes to sound concrete, and clean off dust, dirt, and loose particles.
    b. Dampen cleaned concrete surfaces and apply bonding agent.
    c. Place patching mortar before bonding agent has dried.
    d. Compact patching mortar and finish to match adjacent concrete.
    e. Keep patched area continuously moist for at least 72 hours.

E. Perform structural repairs of concrete, subject to Director’s Representative's approval, using epoxy adhesive and patching mortar.

F. Repair materials and installation not specified above may be used, subject to Director’s Representative's approval.

3.14 FIELD QUALITY CONTROL

A. Special Inspections: Director’s Representative will engage a special inspector and a qualified testing agency to perform tests and inspections in accordance with the requirements of BDC 406 Summary of Special Inspections and BDC 406.1 Statement of Special Inspections and as directed by the Code Compliance Manager.

B. Concrete Tests: Testing of composite samples of fresh concrete obtained in accordance with ASTM C 172 shall be performed in accordance with the following requirements:

1. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mixture exceeding 5 cu. yd., but less than 25 cu. yd., plus one set for each additional 50 cu. yd. or fraction thereof.

    a. When frequency of testing provides fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.

2. Slump: ASTM C143:

    a. One test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture.
    b. Perform additional tests when concrete consistency appears to change.

3. Slump Flow: ASTM C1611:

    a. One test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture.
    b. Perform additional tests when concrete consistency appears to change.

4. Air Content: ASTM C231 pressure method, for normal-weight concrete

    a. One test for each composite sample, but not less than one test for each day's pour of each concrete mixture.

5. Concrete Temperature: ASTM C1064:

    a. One test hourly when air temperature is 40 deg F and below or 80 deg F and above, and one test for each composite sample.

6. Unit Weight: ASTM C567 fresh unit weight of structural lightweight concrete.

    a. One test for each composite sample, but not less than one test for each day's pour of each concrete mixture.

7. Compression Test Specimens: ASTM C31:

    a. Cast and laboratory cure two sets of four 6-inch by 12-inch or 4-inch by 8-inch cylinder specimens for each composite sample.
    b. Cast, initial cure, and field cure two sets of four standard cylinder specimens for each composite sample.

8. Sampling of Pumped Concrete: Sample and cast separate specimens with concrete obtained both at the truck discharge and at the end of the pump delivery line. The test results obtained from the truck discharge shall govern.
9. Compressive-Strength Tests: ASTM C39.

    a. Test one set of three laboratory-cured specimens at seven days and one set of two specimens at 28 days.
    b. Test one set of three field-cured specimens at seven days and one set of two specimens at 28 days.
    c. A compressive-strength test shall be the average compressive strength from a set of two specimens obtained from same composite sample and tested at age indicated.

10. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, Contractor shall evaluate operations and provide corrective procedures for protecting and curing in-place concrete.
11. Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength, and no compressive-strength test value falls below specified compressive strength by more than 500 psi if specified compressive strength is 5000 psi, or no compressive strength test value is less than 10 percent of specified compressive strength if specified compressive strength is greater than 5000 psi.
12. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Director's Representative but will not be used as sole basis for approval or rejection of concrete.
13. Additional Tests:

    a. Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Director's Representative.
    b. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C42 or by other methods as directed by Director's Representative.

        1) Acceptance criteria for concrete strength shall be in accordance with ACI 301 section 1.6.6.3.

14. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
15. Correct deficiencies in the Work that test reports and inspections indicate do not comply with the Contract Documents.

C. Measure floor and slab flatness and levelness in accordance with ASTM E1155 within 48 hours of completion of floor finishing and promptly report test results to Director's Representative.

3.15 PROTECTION

A. Protect concrete surfaces as follows:

1. Protect from petroleum stains.
2. Diaper hydraulic equipment used over concrete surfaces.
3. Prohibit vehicles from interior concrete slabs.
4. Prohibit use of pipe-cutting machinery over concrete surfaces.
5. Prohibit placement of steel items on concrete surfaces.
6. Prohibit use of acids or acidic detergents over concrete surfaces.
7. Protect liquid floor treatment from damage and wear during the remainder of construction period. Use protective methods and materials, including temporary covering, recommended in writing by liquid floor treatments installer.
8. Protect concrete surfaces scheduled to receive surface hardener or polished concrete finish using Floor Slab Protective Covering.

END OF SECTION 033000

SECTION 042200 - CONCRETE UNIT MASONRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Concrete masonry units.
2. Mortar and grout.
3. Steel reinforcing bars.
4. Masonry-joint reinforcement.
5. Miscellaneous masonry accessories.

1.3 DEFINITIONS

A. CMU(s): Concrete masonry unit(s).

B. Reinforced Masonry: Masonry containing reinforcing steel in grouted cells.

1.4 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.5 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Product Data: For each type of product.

C. Shop Drawings: For the following:

1. Masonry Units: Show sizes, profiles, coursing, and locations of special shapes.
2. Reinforcing Steel: Detail bending, lap lengths, and placement of unit masonry reinforcing bars. Comply with ACI 315. Show elevations of reinforced walls.

D. Qualification Data: For testing agency.

E. Material Certificates: For each type and size of the following:

1. Masonry units.

a. Include data on material properties.
b. For masonry units used in structural masonry, include data and calculations establishing average net-area compressive strength of units.

2. Preblended, dry mortar mixes. Include description of type and proportions of ingredients.
3. Grout mixes. Include description of type and proportions of ingredients.

F. Mix Designs: For each type of mortar and grout. Include description of type and proportions of ingredients.

1. Include test reports for mortar mixes required to comply with property specification. Test according to ASTM C109 for compressive strength, ASTM C1506 for water retention, and ASTM C91 for air content.
2. Include test reports, according to ASTM C1019, for grout mixes required to comply with compressive strength requirement.

G. Statement of Compressive Strength of Masonry: For each combination of masonry unit type and mortar type, provide statement of average net-area compressive strength of masonry units, mortar type, and resulting net-area compressive strength of masonry determined according to TMS 602/ACI 530.1/ASCE 6.

H. Documentation to confirm compliance with General Conditions Article 25.4 Domestic Steel.

1.6 QUALITY ASSURANCE

A. Testing Agency Qualifications: Qualified according to ASTM C1093 for testing indicated.

B. If the value of the contract exceeds $100,000 all structural steel, reinforcing steel and other major steel items to be incorporated in the Work of this Contract shall be produced and made in whole or substantial part in the United States, its territories or possessions.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Store masonry units on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied. If units become wet, do not install until they are dry.

B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.

C. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.

D. Deliver preblended, dry mortar mix in moisture-resistant containers. Store preblended, dry mortar mix in delivery containers on elevated platforms in a dry location or in covered weatherproof dispensing silos.

E. Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

1.8 FIELD CONDITIONS

A. Protection of Masonry: During construction, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.

1. Extend cover a minimum of 24 inches down both sides of walls, and hold cover securely in place.

B. Do not apply uniform floor or roof loads for at least 12 hours and concentrated loads for at least three days after building masonry walls or columns.

C. Stain Prevention: Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted. Immediately remove grout, mortar, and soil that come in contact with such masonry.

1. Protect base of walls from rain-splashed mud and from mortar splatter by spreading coverings on ground and over wall surface.
2. Protect sills, ledges, and projections from mortar droppings.
3. Protect surfaces of window and door frames, as well as similar products with painted and integral finishes, from mortar droppings.
4. Turn scaffold boards near the wall on edge at the end of each day to prevent rain from splashing mortar and dirt onto completed masonry.

D. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Comply with cold-weather construction requirements contained in TMS 602/ACI 530.1/ASCE 6.

1. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F and higher and will remain so until masonry has dried, but not less than seven days after completing cleaning.

E. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in TMS 602/ACI 530.1/ASCE 6.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Source Limitations for Masonry Units: Obtain exposed masonry units of a uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, from single source from single manufacturer for each product required.

B. Source Limitations for Mortar Materials: Obtain mortar ingredients of a uniform quality, including color for exposed masonry, from single manufacturer for each cementitious component and from single source or producer for each aggregate.

2.2 PERFORMANCE REQUIREMENTS

A. Provide structural unit masonry that develops 2,000 psi net-area compressive strengths at 28 days.

1. Determine net-area compressive strength of masonry from average net-area compressive strengths of masonry units and mortar types (unit-strength method) according to TMS 602/ACI 530.1/ASCE 6.
2. Determine net-area compressive strength of masonry by testing masonry prisms according to ASTM C1314.

2.3 UNIT MASONRY, GENERAL

A. Masonry Standard: Comply with TMS 602/ACI 530.1/ASCE 6 except as modified by requirements in the Contract Documents.

B. Defective Units: Referenced masonry unit standards may allow a certain percentage of units to contain chips, cracks, or other defects exceeding limits stated. Do not use units where such defects are exposed in the completed Work and will be within 20 feet vertically and horizontally of a walking surface.

2.4 CONCRETE MASONRY UNITS

A. Shapes: Provide shapes indicated and as follows, with exposed surfaces matching exposed faces of adjacent units unless otherwise indicated.

1. Provide special shapes for lintels, corners, jambs, sashes, movement joints, headers, bonding, and other special conditions.
2. Provide square-edged units for outside corners unless otherwise indicated.

B. CMUs: ASTM C90.

1. Density Classification: Normal weight unless otherwise indicated.
2. Size (Width): Manufactured to dimensions 3/8 inch less-than-nominal dimensions.

C. Concrete Building Brick: ASTM C55.

1. Density Classification: Normal weight.
2. Size (Actual Dimensions): 3-5/8 inches wide by 2-1/4 inches high by 7-5/8 inches long.

2.5 CONCRETE LINTELS

A. General: Provide one of the following:

B. Concrete Lintels: ASTM C1623, matching CMUs in color, texture, and density classification; and with reinforcing bars indicated. Provide lintels with net-area compressive strength not less than that of CMUs.

2.6 MORTAR AND GROUT MATERIALS

A. Portland Cement: ASTM C150, Type I or II, except Type III may be used for cold-weather construction. Provide natural color or white cement as required to produce mortar color indicated.

1. Alkali content shall not be more than 0.1 percent when tested according to ASTM C114.

B. Hydrated Lime: ASTM C207, Type S.

C. Portland Cement-Lime Mix: Packaged blend of portland cement and hydrated lime containing no other ingredients.

D. Aggregate for Mortar: ASTM C144.

1. For mortar that is exposed to view, use washed aggregate consisting of natural sand or crushed stone.
2. For joints less than 1/4 inch thick, use aggregate graded with 100 percent passing the No. 16 sieve.

E. Aggregate for Grout: ASTM C404.

F. Cold-Weather Admixture: Nonchloride, noncorrosive, accelerating admixture complying with ASTM C494, Type C, and recommended by manufacturer for use in masonry mortar of composition indicated.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Euclid Chemical Company (The); an RPM company.
b. GCP Applied Technologies Inc.

2.7 REINFORCEMENT

A. Uncoated Steel Reinforcing Bars: ASTM A615 or ASTM A996, Grade 60.

B. Reinforcing Bar Positioners: Wire units designed to fit into mortar bed joints spanning masonry unit cells and to hold reinforcing bars in center of cells. Units are formed from 0.148-inch steel wire, hot-dip galvanized after fabrication. Provide units designed for number of bars indicated.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Heckmann Building Products, Inc.
b. Hohmann & Barnard, Inc.
c. Wire-Bond.

C. Masonry-Joint Reinforcement, General: Ladder type complying with ASTM A951.

1. Interior Walls: Mill- galvanized carbon steel.
2. Wire Size for Side Rods: 0.148-inch diameter.
3. Wire Size for Cross Rods: 0.148-inch diameter.
4. Spacing of Cross Rods: Not more than 16 inches o.c.
5. Provide in lengths of not less than 10 feet, with prefabricated corner and tee units.

2.8 TIES AND ANCHORS

A. General: Ties and anchors shall extend at least 1-1/2 inches into masonry but with at least a 5/8-inch cover on outside face.

B. Materials: Provide ties and anchors specified in this article that are made from materials that comply with the following unless otherwise indicated:

1. Interior Walls: Galvanized-Steel Sheet: ASTM A653, Commercial Steel, G60 zinc coating.
2. Steel Plates, Shapes, and Bars: ASTM A36.

C. Adjustable Anchors for Connecting to Structural Steel Framing: Provide anchors that allow vertical or horizontal adjustment but resist tension and compression forces perpendicular to plane of wall.

1. Anchor Section for Welding to Steel Frame: Crimped 1/4-inch- diameter, hot-dip galvanized steel wire.
2. Tie Section: Triangular-shaped wire tie made from 0.25-inch- diameter**,** hot-dip galvanized steel wire.

D. Partition Top Anchors: 0.105-inch- thick metal plate with a 3/8-inch- diameter metal rod 6 inches long welded to plate and with closed-end plastic tube fitted over rod that allows rod to move in and out of tube. Fabricate from steel, hot-dip galvanized after fabrication.

E. Rigid Anchors: Fabricate from steel bars 1-1/2 inches wide by 1/4 inch thick by 24 inches long, with ends turned up 2 inches or with cross pins unless otherwise indicated.

1. Corrosion Protection: Hot-dip galvanized to comply with ASTMA 153.

2.9 MISCELLANEOUS MASONRY ACCESSORIES

A. Compressible Filler: Premolded filler strips complying with ASTM D1056, Grade 2A1; compressible up to 35 percent; of width and thickness indicated; formulated from neoprene, urethane, or PVC.

B. Preformed Control-Joint Gaskets: Made from styrene-butadiene-rubber compound, complying with ASTM D2000, Designation M2AA-805 or PVC, complying with ASTM D2287, Type PVC-65406 and designed to fit standard sash block and to maintain lateral stability in masonry wall; size and configuration as indicated.

2.10 MORTAR AND GROUT MIXES

A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures unless otherwise indicated.

1. Do not use calcium chloride in mortar or grout.
2. Use portland cement-lime mortar unless otherwise indicated.
3. Add cold-weather admixture (if used) at same rate for all mortar that will be exposed to view, regardless of weather conditions, to ensure that mortar color is consistent.

B. Preblended, Dry Mortar Mix: Furnish dry mortar ingredients in form of a preblended mix. Measure quantities by weight to ensure accurate proportions, and thoroughly blend ingredients before delivering to Project site.

C. Mortar for Unit Masonry: Comply with ASTM C270, Proportion Specification. Provide the following types of mortar for applications stated unless another type is indicated.

1. For reinforced masonry, use Type S.

D. Grout for Unit Masonry: Comply with ASTM C476.

1. Use grout of type indicated or, if not otherwise indicated, of type (fine or coarse) that will comply with TMS 602/ACI 530.1/ASCE 6 for dimensions of grout spaces and pour height.
2. Proportion grout in accordance with ASTM C476, Table 1 or paragraph 4.2.2 for specified 28-day compressive strength indicated, but not less than 2000 psi.
3. Provide grout with a slump of 8 to 11 inches as measured according to ASTM C143.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

1. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.

2. Verify that foundations are within tolerances specified.
3. Verify that reinforcing dowels are properly placed.
4. Verify that substrates are free of substances that would impair mortar bond.

B. Before installation, examine rough-in and built-in construction for piping systems to verify actual locations of piping.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

A. Build chases and recesses to accommodate items specified in this and other Sections.

B. Leave openings for equipment to be installed before completing masonry. After installing equipment, complete masonry to match construction immediately adjacent to opening.

C. Use full-size units without cutting if possible. If cutting is required to provide a continuous pattern or to fit adjoining construction, cut units with motor-driven saws; provide clean, sharp, unchipped edges. Allow units to dry before laying unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.

3.3 TOLERANCES

A. Dimensions and Locations of Elements:

1. For dimensions in cross section or elevation, do not vary by more than plus 1/2 inch or minus 1/4 inch.
2. For location of elements in plan, do not vary from that indicated by more than plus or minus 1/2 inch.
3. For location of elements in elevation, do not vary from that indicated by more than plus or minus 1/4 inch in a story height or 1/2 inch total.

B. Lines and Levels:

1. For bed joints and top surfaces of bearing walls, do not vary from level by more than 1/4 inch in 10 feet, or 1/2-inch maximum.
2. For conspicuous horizontal lines, such as lintels, sills, parapets, and reveals, do not vary from level by more than 1/8 inch in 10 feet, 1/4 inch in 20 feet, or 1/2-inch maximum.
3. For vertical lines and surfaces do not vary from plumb by more than 1/4 inch in 10 feet, 3/8 inch in 20 feet, or 1/2-inch maximum.
4. For conspicuous vertical lines, such as external corners, door jambs, reveals, and expansion and control joints, do not vary from plumb by more than 1/8 inch in 10 feet, 1/4 inch in 20 feet, or 1/2-inch maximum.
5. For lines and surfaces, do not vary from straight by more than 1/4 inch in 10 feet, 3/8 inch in 20 feet, or 1/2-inch maximum.
6. For vertical alignment of exposed head joints, do not vary from plumb by more than 1/4 inch in 10 feet, or 1/2-inch maximum.
7. For faces of adjacent exposed masonry units, do not vary from flush alignment by more than 1/16 inch.

C. Joints:

1. For bed joints, do not vary from thickness indicated by more than plus or minus 1/8 inch, with a maximum thickness limited to 1/2 inch.
2. For exposed bed joints, do not vary from bed-joint thickness of adjacent courses by more than 1/8 inch.
3. For head and collar joints, do not vary from thickness indicated by more than plus 3/8 inch or minus 1/4 inch.
4. For exposed head joints, do not vary from thickness indicated by more than plus or minus 1/8 inch.

3.4 LAYING MASONRY WALLS

A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, movement-type joints, returns, and offsets. Avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.

B. Bond Pattern for Exposed Masonry: Unless otherwise indicated, lay exposed masonry in running bond; do not use units with less-than-nominal 4-inch horizontal face dimensions at corners or jambs.

C. Lay concealed masonry with all units in a wythe in running bond or bonded by lapping not less than 4 inches. Bond and interlock each course of each wythe at corners. Do not use units with less-than-nominal 4-inch horizontal face dimensions at corners or jambs.

D. Stopping and Resuming Work: Stop work by stepping back units in each course from those in course below; do not tooth. When resuming work, clean masonry surfaces that are to receive mortar, remove loose masonry units and mortar, and wet brick if required before laying fresh masonry.

E. Built-in Work: As construction progresses, build in items specified in this and other Sections. Fill in solidly with masonry around built-in items.

F. Where built-in items are to be embedded in cores of hollow masonry units, place a layer of metal lath, wire mesh, or plastic mesh in the joint below, and rod mortar or grout into core.

G. Fill cores in hollow CMUs with grout 24 inches under bearing plates, beams, lintels, posts, and similar items unless otherwise indicated.

H. Build nonload-bearing interior partitions full height of story to underside of solid floor or roof structure above unless otherwise indicated.

1. Install compressible filler in joint between top of partition and underside of structure above.
2. Fasten partition top anchors to structure above and build into top of partition. Grout cells of CMUs solidly around plastic tubes of anchors and push tubes down into grout to provide 1/2-inch clearance between end of anchor rod and end of tube. Space anchors 48 inches o.c. unless otherwise indicated.

3. Wedge nonload-bearing partitions against structure above with small pieces of tile, slate, or metal. Fill joint with mortar after dead-load deflection of structure above approaches final position.

3.5 MORTAR BEDDING AND JOINTING

A. Lay hollow CMUs as follows:

1. Bed face shells in mortar and make head joints of depth equal to bed joints.
2. Bed webs in mortar in all courses of piers, columns, and pilasters.
3. Bed webs in mortar in grouted masonry, including starting course on footings.
4. Fully bed entire units, including areas under cells, at starting course on footings where cells are not grouted.

B. Lay solid CMUs with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not deeply furrow bed joints or slush head joints.

C. Rake out mortar joints at pre-faced CMUs to a uniform depth of 1/4 inch and point with epoxy mortar to comply with epoxy-mortar manufacturer's written instructions.

D. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness unless otherwise indicated.

3.6 MASONRY-JOINT REINFORCEMENT

A. General: Install entire length of longitudinal side rods in mortar with a minimum cover of 5/8 inch on exterior side of walls, 1/2 inch elsewhere. Lap reinforcement a minimum of 6 inches.

1. Space reinforcement not more than 16 inches o.c.
2. Space reinforcement not more than 8 inches o.c. in foundation walls and parapet walls.
3. Provide reinforcement not more than 8 inches above and below wall openings and extending 12 inches beyond openings in addition to continuous reinforcement.

B. Interrupt joint reinforcement at control and expansion joints unless otherwise indicated.

C. Provide continuity at wall intersections by using prefabricated T-shaped units.

D. Provide continuity at corners by using prefabricated L-shaped units.

3.7 ANCHORING MASONRY TO STRUCTURAL STEEL AND CONCRETE

A. Anchor masonry to structural steel and concrete, where masonry abuts or faces structural steel or concrete, to comply with the following:

1. Provide an open space not less than 1/2 inch wide between masonry and structural steel or concrete unless otherwise indicated. Keep open space free of mortar and other rigid materials.
2. Anchor masonry with anchors embedded in masonry joints and attached to structure.

3. Space anchors as indicated, but not more than 24 inches o.c. vertically and 36 inches o.c. horizontally.

3.8 CONTROL AND EXPANSION JOINTS

A. General: Install control- and expansion-joint materials in unit masonry as masonry progresses. Do not allow materials to span control and expansion joints without provision to allow for in-plane wall or partition movement.

B. Form control joints in concrete masonry as follows:

1. Install preformed control-joint gaskets designed to fit standard sash block.
2. Install temporary foam-plastic filler in head joints, and remove filler when unit masonry is complete for application of sealant.

3.9 LINTELS

A. Provide concrete lintels where shown and where openings of more than 12 inches for brick-size units and 24 inches for block-size units are shown without structural steel or other supporting lintels.

B. Provide minimum bearing of 8 inches at each jamb unless otherwise indicated.

3.10 REINFORCED UNIT MASONRY

A. Temporary Formwork and Shores: Construct formwork and shores as needed to support reinforced masonry elements during construction.

1. Construct formwork to provide shape, line, and dimensions of completed masonry as indicated. Make forms sufficiently tight to prevent leakage of mortar and grout. Brace, tie, and support forms to maintain position and shape during construction and curing of reinforced masonry.
2. Do not remove forms and shores until reinforced masonry members have hardened sufficiently to carry their own weight and other loads that may be placed on them during construction.

B. Placing Reinforcement: Comply with requirements in TMS 602/ACI 530.1/ASCE 6.

C. Grouting: Do not place grout until entire height of masonry to be grouted has attained enough strength to resist grout pressure.

1. Comply with requirements in TMS 602/ACI 530.1/ASCE 6 for cleanouts and for grout placement, including minimum grout space and maximum pour height.
2. Limit height of vertical grout pours to not more than 60 inches.

3.11 FIELD QUALITY CONTROL

A. Testing and Inspecting: Director’s Representative will engage a special inspector and a qualified testing agency to perform tests and inspections in accordance with the requirements of BDC 406 Summary of Special Inspections and BDC 406.1 Statement of Special Inspections and as directed by the Code Compliance Manager.

3.12 REPAIRING, POINTING, AND CLEANING

A. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Install new units to match adjoining units; install in fresh mortar, pointed to eliminate evidence of replacement.

B. Pointing: During the tooling of joints, enlarge voids and holes, except weep holes, and completely fill with mortar. Point up joints, including corners, openings, and adjacent construction, to provide a neat, uniform appearance. Prepare joints for sealant application, where indicated.

C. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.

D. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:

1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
2. Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes. Obtain Director’s Representative's approval of sample cleaning before proceeding with cleaning of masonry.
3. Protect adjacent stone and nonmasonry surfaces from contact with cleaner by covering them with liquid strippable masking agent or polyethylene film and waterproof masking tape.
4. Wet wall surfaces with water before applying cleaners; remove cleaners promptly by rinsing surfaces thoroughly with clear water.
5. Clean concrete masonry by applicable cleaning methods indicated in NCMA TEK 8-4A.

3.13 MASONRY WASTE DISPOSAL

A. Salvageable Materials: Unless otherwise indicated, excess masonry materials are Contractor's property. At completion of unit masonry work, remove from Project site.

B. Masonry Waste Recycling: Return broken CMUs not used as fill to manufacturer for recycling.

C. Excess Masonry Waste: Remove excess clean masonry waste that cannot be used as fill, as described above or recycled, and other masonry waste, and legally dispose of off Director’s Representative's property.

END OF SECTION 042200

SECTION 051200 - STRUCTURAL STEEL FRAMING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Structural steel.
2. Shrinkage-resistant grout.

B. Related Requirements:

1. Section 053100 "Steel Decking" for field installation of shear stud connectors through deck.

1.3 DEFINITIONS

A. Structural Steel: Elements of the structural frame indicated on Drawings and as described in ANSI/AISC 303.

1.4 COORDINATION

A. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturers' written recommendations to ensure that shop primers and topcoats are compatible with one another.

B. Coordinate installation of anchorage items to be embedded in or attached to other construction without delaying the Work. Provide setting diagrams, sheet metal templates, instructions, and directions for installation.

1.5 PREINSTALLATION MEETINGS

A. Preinstallation Conference: A minimum of 14 days prior to the initial submission of shop drawings, a meeting will be held at the Site for the purpose of reviewing the Contract Documents and discussing the requirements and procedures for submittals and for the Work. The meeting will be conducted by the Director’s Representative. The Contractor and the fabricator’s project coordinator and certified welding inspector must attend the meeting. The Director’s Representative and a Representative of OGS D&C Structural Engineering will also attend.

1.6 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Product Data:

1. Structural-steel materials.
2. Shop primer.
3. Galvanized-steel primer.
4. Galvanized repair paint.
5. Shrinkage-resistant grout.

C. Submit an Environmental Product Declaration (EPD) from the manufacturer for structural steel within this specification section, if available. A statement of the contractor's good faith effort to obtain the EPD shall be provided if not available.

1. Manufacturer-provided EPDs must be Product Specific Type III (Third-Party Reviewed), in adherence with ISO 14025 *Environmental labels and declarations*, ISO 14044 *Environmental management – Life cycle assessment*, and ISO 21930 *Core rules for environmental product declarations of construction products and services.*

D. Shop Drawings: Show fabrication of structural-steel components.

1. Include details of cuts, connections, splices, camber, holes, and other pertinent data.
2. Include erection drawings indicating sizes, weights, and locations of all structural members.
3. Include embedment and base plate Drawings.
4. Indicate welds by standard AWS symbols, distinguishing between shop and field welds, and show size, length, and type of each weld. Show backing bars that are to be removed and supplemental fillet welds where backing bars are to remain.
5. Indicate type, size, and length of bolts, distinguishing between shop and field bolts.
6. Identify members and connections of the seismic-load-resisting system.
7. Identify members not to be shop primed.

E. Welding Procedure Specifications (WPSs) and Procedure Qualification Records (PQRs): Provide in accordance with AWS D1.1 for each welded joint whether prequalified or qualified by testing, including the following:

1. Power source (constant current or constant voltage).
2. Electrode manufacturer and trade name, for demand-critical welds.

F. Delegated-Design Submittal: For structural-steel connections indicated on Drawings to comply with design loads, include analysis data signed and sealed by the qualified professional engineer in New York State responsible for their preparation.

G. Qualification Data: For Installer fabricator, professional engineer, testing agency.

H. Welding certificates.

I. Mill test reports for structural-steel materials, including chemical and physical properties.

J. Product Test Reports: For the following:

1. Bolts, nuts, and washers, including mechanical properties and chemical analysis.
2. Tension-control, high-strength, bolt-nut-washer assemblies.
3. Shear stud connectors.

K. Source quality-control reports.

1. Documentation to confirm compliance with General Conditions Article 25.4 Domestic Steel.

1.7 QUALITY ASSURANCE

A. Fabricator Qualifications: The fabricator of the structural steel shall be regularly engaged in the fabrication of structural steel for a minimum of 5 years and shall be subject to the approval of the Director.

1. AISC Quality Certified Fabricators (latest list issued) are approved.

B. Installer Qualifications: The structural steel erector shall be regularly engaged in the erection of structural steel for a minimum of 5 years, and shall be subject to the approval of the Director.

C. Shop-Painting Applicators: Qualified in accordance with AISC's Sophisticated Paint Endorsement P1 or to SSPC-QP 3.

D. Welding Qualifications: Qualify procedures and personnel in accordance with AWS D1.1.

1. Welders and welding operators performing work on bottom-flange, demand-critical welds shall pass the supplemental welder qualification testing, as required by AWS D1.8. FCAW-S and FCAW-G shall be considered separate processes for welding personnel qualification.

E. If the value of the contract exceeds $100,000 all structural steel, reinforcing steel and other major steel items to be incorporated in the Work of this Contract shall be produced and made in whole or substantial part in the United States, its territories or possessions.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Store materials to permit easy access for inspection and identification. Keep steel members off ground and spaced by using pallets, dunnage, or other supports and spacers. Protect steel members and packaged materials from corrosion and deterioration.

1. Do not store materials on structure in a manner that might cause distortion, damage, or overload to members or supporting structures. Repair or replace damaged materials or structures as directed.

B. Store fasteners in a protected place in sealed containers with manufacturer's labels intact.

1. Fasteners may be repackaged provided Director’s Representative's testing and inspecting agency observes repackaging and seals containers.

2. Clean and relubricate bolts and nuts that become dry or rusty before use.
3. Comply with manufacturers' written recommendations for cleaning and lubricating ASTM F3125, Grade F1852 bolt assemblies and for retesting bolt assemblies after lubrication.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Comply with applicable provisions of the following specifications and documents:

1. ANSI/AISC 303.
2. ANSI/AISC 341.
3. ANSI/AISC 360.
4. RCSC's "Specification for Structural Joints Using High-Strength Bolts."

B. Connection Design Information:

1. Design connections and final configuration of member reinforcement at connections in accordance with ANSI/AISC 303 by fabricator's qualified professional engineer.

a. Use Allowable Stress Design; data are given at service-load level.

C. Moment Connections: Type FR, fully restrained.

2.2 STRUCTURAL-STEEL MATERIALS

A. W-Shapes: ASTM A992.

B. Channels, Angles**:** ASTM A36.

C. Plate and Bar: ASTM A36.

D. Cold-Formed Hollow Structural Sections: ASTM A500, Grade B structural tubing.

E. Welding Electrodes: Comply with AWS requirements.

2.3 BOLTS AND CONNECTORS

A. High-Strength A325 Bolts, Nuts, and Washers: ASTM F3125, Grade A325, Type 1, heavy-hex steel structural bolts; ASTM A563, Grade DH, heavy-hex carbon-steel nuts; and ASTM F436, Type 1, hardened carbon-steel washers; all with plain finish.

1. Direct-Tension Indicators: ASTM F959, Type 325-1, compressible-washer type with plain finish.

2.4 RODS

A. Anchor Rods: ASTM F1554, Grade 36, straight.

1. Nuts: ASTM A563hex carbon steel.
2. Plate Washers: ASTM A36 carbon steel.
3. Washers: ASTM F436, Type 1, hardened carbon steel.
4. Finish: Plain.

2.5 PRIMER

A. Steel Primer:
1. Fabricator's standard lead- and chromate-free, nonasphaltic, rust-inhibiting primer complying with MPI#79 and compatible with topcoat.

B. Galvanized-Steel Primer: MPI#80,

1. Etching Cleaner: MPI#25, for galvanized steel.
2. Galvanizing Repair Paint: MPI#18, MPI#19, or SSPC-Paint 20.

2.6 SHRINKAGE-RESISTANT GROUT

A. Metallic, Shrinkage-Resistant Grout: ASTM C1107, factory-packaged, metallic aggregate grout, mixed with water to consistency suitable for application and a 30-minute working time.

B. Nonmetallic, Shrinkage-Resistant Grout: ASTM C1107, factory-packaged, nonmetallic aggregate grout, noncorrosive and nonstaining, mixed with water to consistency suitable for application and a 30-minute working time.

2.7 FABRICATION

A. Structural Steel: Fabricate and assemble in shop to greatest extent possible. Fabricate in accordance with ANSI/AISC 303 and to ANSI/AISC 360.

1. Camber structural-steel members where indicated.
2. Fabricate beams with rolling camber up.
3. Identify high-strength structural steel in accordance with ASTM A6 and maintain markings until structural-steel framing has been erected.
4. Mark and match-mark materials for field assembly.
5. Complete structural-steel assemblies, including welding of units, before starting shop-priming operations.

B. Thermal Cutting: Perform thermal cutting by machine to greatest extent possible.

1. Plane thermally cut edges to be welded to comply with requirements in AWS D1.1.

C. Bolt Holes: Cut, drill,or punch standard bolt holes perpendicular to metal surfaces.

D. Finishing: Accurately finish ends of columns and other members transmitting bearing loads.

E. Cleaning: Clean and prepare steel surfaces that are to remain unpainted in accordance with SSPC-SP 3.

F. Steel Wall-Opening Framing: Select true and straight members for fabricating steel wall-opening framing to be attached to structural-steel frame. Straighten as required to provide uniform, square, and true members in completed wall framing. Build up welded framing, weld exposed joints continuously, and grind smooth.

G. Welded-Steel Door Frames: Build up welded-steel door frames attached to structural-steel frame. Weld exposed joints continuously and grind smooth. Plug-weld fixed steel bar stops to frames. Secure removable stops to frames with countersunk machine screws, uniformly spaced not more than 10 inches o.c. unless otherwise indicated on Drawings.

H. Holes: Provide holes required for securing other work to structural steel and for other work to pass through steel members.

1. Cut, drill, or punch holes perpendicular to steel surfaces. Do not thermally cut bolt holes or enlarge holes by burning.
2. Baseplate Holes: Cut, drill, mechanically thermal cut, or punch holes perpendicular to steel surfaces.
3. Weld threaded nuts to framing and other specialty items indicated to receive other work.

2.8 SHOP CONNECTIONS

A. High-Strength Bolts: Shop install high-strength bolts in accordance with RCSC's "Specification for Structural Joints Using High-Strength Bolts" for type of bolt and type of joint specified.

1. Joint Type: Snug tightened.

B. Weld Connections: Comply with AWS D1.1 and AWS D1.8 for tolerances, appearances, welding procedure specifications, weld quality, and methods used in correcting welding work.

1. Assemble and weld built-up sections by methods that maintain true alignment of axes without exceeding tolerances in ANSI/AISC 303 for mill material.

2.9 SHOP PRIMING

A. Shop prime steel surfaces, except the following:

1. Surfaces embedded in concrete or mortar. Extend priming of partially embedded members to a depth of 2 inches.
2. Surfaces to be field welded.
3. Surfaces of high-strength bolted, slip-critical connections.
4. Surfaces to receive sprayed fire-resistive materials (applied fireproofing).

5. Galvanized surfaces unless indicated to be painted.
6. Surfaces enclosed in interior construction.

B. Surface Preparation of Steel: Clean surfaces to be painted. Remove loose rust and mill scale and spatter, slag, or flux deposits. Prepare surfaces in accordance with the following specifications and standards:

1. SSPC-SP 2.
2. SSPC-SP 3.
3. SSPC-SP 7 (WAB)/NACE WAB-4.
4. SSPC-SP 14 (WAB)/NACE WAB-8.
5. SSPC-SP 11.
6. SSPC-SP 6 (WAB)/NACE WAB-3.
7. SSPC-SP 10 (WAB)/NACE WAB-2.
8. SSPC-SP 5 (WAB)/NACE WAB-1.
9. SSPC-SP 8.

C. Surface Preparation of Galvanized Steel: Prepare galvanized-steel surfaces for shop priming by thoroughly cleaning steel of grease, dirt, oil, flux, and other foreign matter, and treating with etching cleaner.

D. Priming: Immediately after surface preparation, apply primer in accordance with manufacturer's written instructions and at rate recommended by SSPC to provide a minimum dry film thickness of 1.5 mils. Use priming methods that result in full coverage of joints, corners, edges, and exposed surfaces.

1. Stripe paint corners, crevices, bolts, welds, and sharp edges.
2. Apply two coats of shop paint to surfaces that are inaccessible after assembly or erection. Change color of second coat to distinguish it from first.

2.10 SOURCE QUALITY CONTROL

A. Testing Agency: Director’s Representative will engage a qualified testing agency to perform shop tests and inspections.

1. Allow testing agency access to places where structural-steel work is being fabricated or produced to perform tests and inspections.
2. Bolted Connections: Inspect shop-bolted connections in accordance with RCSC's "Specification for Structural Joints Using High-Strength Bolts."
3. Welded Connections: Visually inspect shop-welded connections in accordance with AWS D1.1 and the following inspection procedures, at testing agency's option:

    a. Liquid Penetrant Inspection: ASTM E165.
    b. Magnetic Particle Inspection: ASTM E709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration are not accepted.
    c. Ultrasonic Inspection: ASTM E164.
    d. Radiographic Inspection: ASTM E94.

4. In addition to visual inspection, test and inspect shop-welded shear stud connectors in accordance with requirements in AWS D1.1 for stud welding and as follows:

a. Perform bend tests if visual inspections reveal either a less-than-continuous 360-degree flash or welding repairs to any shear stud connector.
b. Conduct tests in accordance with requirements in AWS D1.1 on additional shear stud connectors if weld fracture occurs on shear stud connectors already tested.

5. Prepare test and inspection reports.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify, with certified steel erector present, elevations of concrete- and masonry-bearing surfaces and locations of anchor rods, bearing plates, and other embedments for compliance with requirements.

1. Prepare a certified survey of existing conditions. Include bearing surfaces, anchor rods, bearing plates, and other embedments showing dimensions, locations, angles, and elevations.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Provide temporary shores, guys, braces, and other supports during erection to keep structural steel secure, plumb, and in alignment against temporary construction loads and loads equal in intensity to design loads. Remove temporary supports when permanent structural steel, connections, and bracing are in place unless otherwise indicated on Drawings.

1. Do not remove temporary shoring supporting composite deck construction and structural-steel framing until cast-in-place concrete has attained its design compressive strength.

3.3 ERECTION

A. Set structural steel accurately in locations and to elevations indicated and in accordance with ANSI/AISC 303 and ANSI/AISC 360.

B. Bearing Plates and Leveling Plates: Clean concrete- and masonry-bearing surfaces of bond-reducing materials, and roughen surfaces prior to setting plates. Clean bottom surface of plates.

1. Set plates for structural members on wedges, shims, or setting nuts as required.
2. Weld plate washers to top of baseplate.
3. Snug-tighten anchor rods after supported members have been positioned and plumbed. Do not remove wedges or shims but, if protruding, cut off flush with edge of plate before packing with grout.
4. Promptly pack shrinkage-resistant grout solidly between bearing surfaces and plates, so no voids remain. Neatly finish exposed surfaces; protect grout and allow to cure. Comply with manufacturer's written installation instructions for grouting.

C. Maintain erection tolerances of structural steel within ANSI/AISC 303.

D. Align and adjust various members that form part of complete frame or structure before permanently fastening. Before assembly, clean bearing surfaces and other surfaces that are in permanent contact with members. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.

1. Level and plumb individual members of structure. Slope roof framing members to slopes indicated on Drawings.
2. Make allowances for difference between temperature at time of erection and mean temperature when structure is completed and in service.

E. Splice members only where indicated.

F. Do not use thermal cutting during erection unless approved by the Director's Representative. Finish thermally cut sections within smoothness limits in AWS D1.1.

G. Do not enlarge unfair holes in members by burning or using drift pins. Ream holes that must be enlarged to admit bolts.

3.4 FIELD CONNECTIONS

A. High-Strength Bolts: Install high-strength bolts in accordance with RCSC's "Specification for Structural Joints Using High-Strength Bolts" for bolt and joint type specified.

1. Joint Type: Snug tightened.

B. Weld Connections: Comply with AWS D1.1 and AWS D1.8 for tolerances, appearances, welding procedure specifications, weld quality, and methods used in correcting welding work.

1. Comply with ANSI/AISC 303 and ANSI/AISC 360 for bearing, alignment, adequacy of temporary connections, and removal of paint on surfaces adjacent to field welds.
2. Remove backing bars or runoff tabs where indicated, back gouge, and grind steel smooth.
3. Assemble and weld built-up sections by methods that maintain true alignment of axes without exceeding tolerances in ANSI/AISC 303 for mill material.

3.5 REPAIR

A. Galvanized Surfaces: Clean areas where galvanizing is damaged or missing, and repair galvanizing to comply with ASTM A780.

B. Touchup Painting:

1. Immediately after erection, clean exposed areas where primer is damaged or missing, and paint with the same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.

a. Clean and prepare surfaces by SSPC-SP 2 hand-tool cleaning or SSPC-SP 3 power-tool cleaning.

2. Cleaning and touchup painting are specified in Section 099123 "Interior Painting."

3.6 FIELD QUALITY CONTROL

A. Special Inspections: Director’s Representative will engage a special inspector and a qualified testing agency to perform tests and inspections in accordance with the requirements of BDC 406 Summary of Special Inspections and BDC 406.1 Statement of Special Inspections and as directed by the Code Compliance Manager.

END OF SECTION 051200

SECTION 053100 - STEEL DECKING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Composite floor deck.

B. Related Requirements:

1. Section 033000 "Cast-in-Place Concrete" for normal-weight and lightweight structural concrete fill over steel deck.
2. Section 051200 "Structural Steel Framing" for shop- and field-welded shear connectors.

1.3 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Product Data: For the following:

1. Composite floor deck.

C. Submit an Environmental Product Declaration (EPD) from the manufacturer for steel sheets within this specification section, if available. A statement of the contractor's good faith effort to obtain the EPD shall be provided if not available.

1. Manufacturer-provided EPDs must be Product Specific Type III (Third-Party Reviewed), in adherence with ISO 14025 *Environmental labels and declarations*, ISO 14044 *Environmental management – Life cycle assessment*, and ISO 21930 *Core rules for environmental product declarations of construction products and services.*

D. Shop Drawings:

1. Include layout and types of deck panels, anchorage details, reinforcing channels, pans, cut deck openings, special jointing, accessories, and attachments to other construction.

E. Welding certificates.

F. Product Certificates: For each type of steel deck.

G. Product Test Reports: For tests performed by a qualified testing agency, indicating that each of the following complies with requirements:

1. Power-actuated mechanical fasteners.
2. Screw fasteners

H. Research Reports: For steel deck, from ICC-ES.

I. Source quality-control reports.

1. Documentation to confirm compliance with General Conditions Article 25.4 Domestic Steel.

1.4 QUALITY ASSURANCE

A. Welding Qualifications: Qualify procedures and personnel according to AWS D1.3, "Structural Welding Code - Sheet Steel."

B. If the value of the contract exceeds $100,000 all structural steel, reinforcing steel and other major steel items to be incorporated in the Work of this Contract shall be produced and made in whole or substantial part in the United States, its territories or possessions.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Protect steel deck from corrosion, deformation, and other damage during delivery, storage, and handling.

B. Stack steel deck on platforms or pallets and slope to provide drainage. Protect with a waterproof covering and ventilate to avoid condensation.

1. Protect and ventilate acoustical cellular roof deck with factory-installed insulation to maintain insulation free of moisture.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. AISI Specifications: Comply with calculated structural characteristics of steel deck according to AISI's "North American Specification for the Design of Cold-Formed Steel Structural Members."

B. Fire-Resistance Ratings: Comply with ASTM E119; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Indicate design designations from UL's "Fire Resistance Directory" or from the listings of another qualified testing agency.

2.2 COMPOSITE FLOOR DECK

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Canam Steel Corporation; Canam Group, Inc.
2. Epic Metals Corporation.
3. New Millennium Building Systems, LLC.
4. Nucor Corporation.
5. Approved equivalent.

B. Composite Floor Deck: Fabricate panels, with integrally embossed or raised pattern ribs and interlocking side laps, to comply with "SDI Specifications and Commentary for Composite Steel Floor Deck," in SDI Publication No. 31, with the minimum section properties indicated, and with the following:

1. Galvanized and Shop-Primed Steel Sheet: ASTM A653, Structural Steel (SS), Grade 33, G60 zinc coating; with unpainted top surface and cleaned and pretreated bottom surface primed with manufacturer's standard white baked-on, rust-inhibitive primer.
2. Profile Depth: As indicated.
3. Design Uncoated-Steel Thickness: As indicated
4. Span Condition: Triple span or more.

2.3 ACCESSORIES

A. Provide manufacturer's standard accessory materials for deck that comply with requirements indicated.

B. Mechanical Fasteners: Corrosion-resistant, low-velocity, power-actuated or pneumatically driven carbon-steel fasteners; or self-drilling, self-threading screws.

C. Side-Lap Fasteners: Corrosion-resistant, hexagonal washer head; self-drilling, carbon-steel screws, No. 10 minimum diameter.

D. Flexible Closure Strips: Vulcanized, closed-cell, synthetic rubber.

E. Miscellaneous Sheet Metal Deck Accessories: Steel sheet, minimum yield strength of 33,000 psi, not less than 0.0359-inch design uncoated thickness, of same material and finish as deck; of profile indicated or required for application.

F. Pour Stops and Girder Fillers: Steel sheet, minimum yield strength of 50,000 psi, minimum 16 ga., of same material and finish as deck, and of thickness and profile recommended by SDI Publication No. 31 for overhang and slab depth.

G. Column Closures, End Closures, Z-Closures, and Cover Plates: Steel sheet, of same material, finish, and thickness as deck unless otherwise indicated.

H. Piercing Hanger Tabs: Piercing steel sheet hanger attachment devices for use with floor deck.

I. Weld Washers: Uncoated steel sheet, shaped to fit deck rib, 0.0747 inch thick, with factory-punched hole of 3/8-inch minimum diameter.

J. Flat Sump Plates: Single-piece steel sheet, 0.0747 inch thick, of same material and finish as deck. For drains, cut holes in the field.

K. Recessed Sump Pans: Single-piece steel sheet, 0.0747 inch thick, of same material and finish as deck, with 3-inch- wide flanges and [level] [sloped] recessed pans of 1-1/2-inch minimum depth. For drains, cut holes in the field.

L. Galvanizing Repair Paint: ASTM A780 SSPC-Paint 20 or MIL-P-21035B, with dry film containing a minimum of 94 percent zinc dust by weight.

M. Repair Paint: Manufacturer's standard rust-inhibitive primer of same color as primer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine supporting frame and field conditions for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

A. Install deck panels and accessories according to applicable specifications and commentary in SDI Publication No. 31, manufacturer's written instructions, and requirements in this Section.

B. Install temporary shoring before placing deck panels if required to meet deflection limitations.

C. Locate deck bundles to prevent overloading of supporting members.

D. Place deck panels on supporting frame and adjust to final position with ends accurately aligned and bearing on supporting frame before being permanently fastened. Do not stretch or contract side-lap interlocks.

1. Align cellular deck panels over full length of cell runs and align cells at ends of abutting panels.

E. Place deck panels flat and square and fasten to supporting frame without warp or deflection.

F. Cut and neatly fit deck panels and accessories around openings and other work projecting through or adjacent to deck.

G. Provide additional reinforcement and closure pieces at openings as required for strength, continuity of deck, and support of other work.

H. Comply with AWS requirements and procedures for manual shielded metal arc welding (SMAW), appearance and quality of welds, and methods used for correcting welding work.

I. Mechanical fasteners may be used in lieu of welding to fasten deck. Locate mechanical fasteners and install according to deck manufacturer's written instructions.

3.3 INSTALLATION OF FLOOR DECK

A. Fasten floor-deck panels to steel supporting members by arc spot (puddle) welds of the surface diameter indicated and as follows:

1. Weld Diameter: 3/4 inch, nominal.
2. Weld Spacing: Weld edge ribs of panels at each support. Space additional welds an average of 12 inches apart, but not more than 18 inches apart.
3. Weld Spacing: Space and locate welds as indicated.
4. Weld Washers: Install weld washers at each weld location.

B. Side-Lap and Perimeter Edge Fastening: Fasten side laps and perimeter edges of panels between supports, at intervals not exceeding the lesser of one-half of the span or 36 inches, and as follows:

1. Mechanically fasten with self-drilling, No. 10 diameter or larger, carbon-steel screws.
2. Mechanically clinch or button punch.
3. Fasten with a minimum of 1-1/2-inch- long welds.

C. End Bearing: Install deck ends over supporting frame with a minimum end bearing of 1-1/2 inches, with end joints as follows:

1. End Joints: Butted.

D. Pour Stops and Girder Fillers: Weld steel sheet pour stops and girder fillers to supporting structure according to SDI recommendations unless otherwise indicated.

E. Floor-Deck Closures: Weld steel sheet column closures, cell closures, and Z-closures to deck, according to SDI recommendations, to provide tight-fitting closures at open ends of ribs and sides of deck.

3.4 REPAIR

A. Galvanizing Repairs: Prepare and repair damaged galvanized coatings on both surfaces of deck with galvanized repair paint according to ASTM A780 and manufacturer's written instructions.

B. Repair Painting:

1. Wire brush and clean rust spots, welds, and abraded areas on both surfaces of prime-painted deck immediately after installation, and apply repair paint.

2. Apply repair paint, of same color as adjacent shop-primed deck, to bottom surfaces of deck exposed to view.

3.5 FIELD QUALITY CONTROL

A. Special Inspections: Director's Representative will engage a special inspector and a qualified testing agency to perform tests and inspections in accordance with the requirements of BDC 406 Summary of Special Inspections and BDC 406.1 Statement of Special Inspections and as directed by the Code Compliance Manager.

END OF SECTION 053100

SECTION 055000 - METAL FABRICATIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 COORDINATION

A. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturers' written instructions to ensure that shop primers and topcoats are compatible with one another.

B. Coordinate installation of metal fabrications that are anchored to or that receive other work. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

1.3 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Product Data: For the following:

1. Shop primers.
2. Shrinkage-resisting grout.

C. Submit an Environmental Product Declaration (EPD) from the manufacturer for structural steel and slotted channel framing within this specification section, if available. A statement of the contractor’s good faith effort to obtain the EPD shall be provided if not available.

1. Manufacturer-provided EPDs must be Product Specific Type III (Third-Party Reviewed), in adherence with ISO 14025 *Environmental labels and declarations*, ISO 14044 *Environmental management – Life cycle assessment*, and ISO 21930 *Core rules for environmental product declarations of construction products and services.*

D. Shop Drawings: Show fabrication and installation details.[Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items.]

E. Welding certificates.

F. Paint Compatibility Certificates: From manufacturers of topcoats applied over shop primers, certifying that shop primers are compatible with topcoats.

G. Source quality-control reports.

1. Documentation to confirm compliance with General Conditions Article 25.4 Domestic Steel.

1.4 QUALITY ASSURANCE

A. Welding Qualifications: Qualify procedures and personnel in accordance with the following:

1. AWS D1.1, "Structural Welding Code - Steel."

B. If the value of the contract exceeds $100,000 all structural steel, reinforcing steel and other major steel items to be incorporated in the Work of this Contract shall be produced and made in whole or substantial part in the United States, its territories or possessions.

1.5 FIELD CONDITIONS

A. Field Measurements: Verify actual locations of walls, floor slabs, decks, and other construction contiguous with metal fabrications by field measurements before fabrication.

PART 2 - PRODUCTS

2.1 METALS

A. Metal Surfaces, General: Provide materials with smooth, flat surfaces unless otherwise indicated. For metal fabrications exposed to view in the completed Work, provide materials without seam marks, roller marks, rolled trade names, or blemishes.

B. Structural Steel Plates, Shapes, and Bars: ASTM A36.

C. Wide Flange Structural Steel Shapes: ASTM A992 , Grade 50.

D. Structural Steel Tubing: ASTM A500, cold-formed steel tubing.

E. Structural Steel Pipe: ASTM A53, Standard Weight (Schedule 40) unless otherwise indicated.

2.2 FASTENERS

A. Steel Bolts and Nuts: Regular hexagon-head bolts, ASTM A307, Grade A; with hex nuts, ASTM A563; and, where indicated, flat washers.

B. High-Strength Bolts, Nuts, and Washers: ASTM F3125, Grade A325 or A440 as noted, Type 3, heavy-hex steel structural bolts; ASTM A563, Grade DH3, heavy-hex carbon-steel nuts; and where indicated, flat washers.

C. Anchor Bolts: ASTM F1554, Grade 36 or as noted, of dimensions indicated; with nuts, ASTM A563; and, where indicated, flat washers.

1. Hot-dip galvanize or provide mechanically deposited, zinc coating where item being fastened is indicated to be galvanized.

2.3 MISCELLANEOUS MATERIALS

A. Shop Primers: Provide primers that comply with Section 099123 "Interior Painting.".

B. Shrinkage-Resistant Grout: Factory-packaged, nonmetallic, nonstaining, noncorrosive, nongaseous grout complying with ASTM C1107. Provide grout specifically recommended by manufacturer for interior and exterior applications.

2.4 FABRICATION, GENERAL

A. Shop Assembly: Preassemble items in the shop to greatest extent possible. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.

B. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.

C. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.

D. Form exposed work with accurate angles and surfaces and straight edges.

E. Weld corners and seams continuously to comply with the following:

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
2. Obtain fusion without undercut or overlap.
3. Remove welding flux immediately.
4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.

F. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners or welds where possible. Where exposed fasteners are required, use Phillips flat-head (countersunk) fasteners unless otherwise indicated. Locate joints where least conspicuous.

G. Fabricate seams and other connections that are exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.

H. Cut, reinforce, drill, and tap metal fabrications as indicated to receive finish hardware, screws, and similar items.

I. Provide for anchorage of type indicated; coordinate with supporting structure. Space anchoring devices to secure metal fabrications rigidly in place and to support indicated loads.

2.5 MISCELLANEOUS FRAMING AND SUPPORTS

A. General: Provide steel framing and supports not specified in other Sections as needed to complete the Work.

B. Fabricate units from steel shapes, plates, and bars of welded construction unless otherwise indicated. Fabricate to sizes, shapes, and profiles indicated and as necessary to receive adjacent construction.

C. Fabricate supports for operable partitions from continuous steel beams of sizes indicated with attached bearing plates, anchors, and braces as indicated. Drill or punch bottom flanges of beams to receive partition track hanger rods; locate holes where indicated on operable partition Shop Drawings.

D. Prime miscellaneous framing and supports with primer specified in Section Section 099123 "Interior Painting.".

2.6 MISCELLANEOUS STEEL TRIM

A. Unless otherwise indicated, fabricate units from steel shapes, plates, and bars of profiles shown with continuously welded joints and smooth exposed edges. Miter corners and use concealed field splices where possible.

B. Provide cutouts, fittings, and anchorages as needed to coordinate assembly and installation with other work.

1. Provide with integrally welded steel strap anchors for embedding in concrete or masonry construction.

C. Prime miscellaneous steel trim with primer specified in Section 099123 "Interior Painting."

2.7 LOOSE STEEL LINTELS

A. Fabricate loose steel lintels from steel angles and shapes of size indicated for openings and recesses in masonry walls and partitions at locations indicated. Fabricate in single lengths for each opening unless otherwise indicated. Weld adjoining members together to form a single unit where indicated.

B. Size loose lintels to provide bearing length at each side of openings equal to 1/12 of clear span, but not less than 8 inches unless otherwise indicated.

C. Prime loose steel lintels located in interior walls with primer specified in Section 099123 "Interior Painting."

2.8 GENERAL FINISH REQUIREMENTS

A. Finish metal fabrications after assembly.

B. Finish exposed surfaces to remove tool and die marks and stretch lines, and to blend into surrounding surface.

2.9 STEEL AND IRON FINISHES

A. Shop prime iron and steel items unless they are to be embedded in concrete, sprayed-on fireproofing, or masonry, or unless otherwise indicated.

1. Shop prime with primers specified in Section 099123 "Interior Painting" unless indicated.

B. Preparation for Shop Priming: Prepare surfaces to comply with SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."

C. Shop Priming: Apply shop primer to comply with SSPC-PA 1, "Paint Application Specification No. 1: Shop, Field, and Maintenance Painting of Steel," for shop painting.

1. Stripe paint corners, crevices, bolts, welds, and sharp edges.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.

B. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.

C. Field Welding: Comply with the following requirements:

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
2. Obtain fusion without undercut or overlap.
3. Remove welding flux immediately.
4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.

D. Fastening to In-Place Construction: Provide anchorage devices and fasteners where metal fabrications are required to be fastened to in-place construction. Provide threaded fasteners for

use with concrete and masonry inserts, toggle bolts, through bolts, lag screws, wood screws, and other connectors.

E. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar construction.

3.2 INSTALLATION OF MISCELLANEOUS FRAMING AND SUPPORTS

A. General: Install framing and supports to comply with requirements of items being supported, including manufacturers' written instructions and requirements indicated on Shop Drawings.

B. Support steel girders on solid grouted masonry, concrete, or steel pipe columns. Secure girders with anchor bolts embedded in grouted masonry or concrete or with bolts through top plates of pipe columns.

C. Install pipe columns on concrete footings with grouted baseplates. Position and grout column baseplates as specified in "Installation of Bearing and Leveling Plates" Article.

1. Grout baseplates of columns supporting steel girders after girders are installed and leveled.

3.3 INSTALLATION OF BEARING AND LEVELING PLATES

A. Clean concrete and masonry bearing surfaces of bond-reducing materials, and roughen to improve bond to surfaces. Clean bottom surface of plates.

B. Set bearing and leveling plates on wedges, shims, or leveling nuts. After bearing members have been positioned and plumbed, tighten anchor bolts. Do not remove wedges or shims but, if protruding, cut off flush with edge of bearing plate before packing with shrinkage-resistant grout. Pack grout solidly between bearing surfaces and plates to ensure that no voids remain.

3.4 REPAIRS

A. Touchup Painting:

1. Immediately after erection, clean field welds, bolted connections, and abraded areas. Paint uncoated and abraded areas with same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.

a. Apply by brush or spray to provide a minimum 2.0-mil dry film thickness.

END OF SECTION 055000

SECTION 079100 - EXPANSION JOINT ASSEMBLIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Expansion Joint Assemblies.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.4 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Product Data:

1. Provide manufacturer's installation instructions.
2. Expansion joint assemblies.

PART 2 - PRODUCTS

2.1 SOURCE LIMITATIONS

A. For preformed joint seals, obtain each color, type, and variety of joint seal from single source with resources to provide products of consistent quality in appearance and physical properties.

2.2 ASSEMBLY DESCRIPTION

A. Furnish units in longest practicable lengths to minimize field splicing.

2.3 PERFORMANCE REQUIREMENTS

A. Expansion Joint Design Criteria:

1. Type of Movement: Thermal.
2. Nominal Joint Width: As indicated on drawings.

2.4 EXPANSION JOINT ASSEMBLIES

A. Carpet Expansion Joint: Assembly consisting of elastomeric seal locked into metal frames bolted to slab.

1. Basis-of-Design Product: inpro Architectural Products; Model #109-A01-025.

a. Finish Color: As selected by the Architect from manufacturer’s standard colors.

2.5 MISCELLANEOUS MATERIALS

A. Manufacturer's stainless-steel attachment devices. Include anchors, clips, fasteners, set screws, spacers, and other accessories compatible with material in contact, as indicated or required for complete installations.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine surfaces where expansion joint cover assemblies will be installed for installation tolerances and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Prepare substrates according to expansion joint assembly manufacturer's written instructions.

B. Coordinate and furnish anchorages, setting drawings, and instructions for installing expansion joint assemblies. Provide fasteners of metal, type, and size to suit type of construction indicated and to provide for secure attachment of expansion joint cover assemblies.

3.3 INSTALLATION

A. Comply with manufacturer's written instructions for storing, handling, and installing expansion joint assemblies and materials unless more stringent requirements are indicated.

3.4 PROTECTION

A. Protect the installation from damage by work of other Sections. Where necessary due to heavy construction traffic, remove and properly store cover plates or seals, and install temporary protection over expansion joint cover assemblies. Reinstall cover plates or seals prior to Substantial Completion.

END OF SECTION 079100

SECTION 096513 - RESILIENT BASE AND ACCESSORIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Thermoset-rubber base.
2. Rubber stair accessories.
3. Rubber molding accessories.

1.3 SUBMITTALS

A. General: Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer's installation instructions shall be provided along with product data.

C. Product Data: For each type of product.

D. Samples: For each exposed product and for each color and texture specified, not less than 12 inches long.

E. Product Schedule: For resilient base and accessory products. Use same designations indicated on Drawings.

1.4 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Furnish not less than 10 linear feet for every 500 linear feet or fraction thereof, of each type, color, pattern, and size of resilient product installed.

1.5 QUALITY ASSURANCE

A. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.

1. Coordinate mockups in this Section with mockups specified in other Sections.
2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Director's Representative specifically approves such deviations in writing.
3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store resilient products and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by manufacturer, but not less than 50 deg F or more than 90 deg F.

1.7 FIELD CONDITIONS

A. Maintain ambient temperatures within range recommended by manufacturer, but not less than 70 deg F or more than 95 deg F, in spaces to receive resilient products during the following periods:

1. 48 hours before installation.
2. During installation.
3. 48 hours after installation.

B. After installation and until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer, but not less than 55 deg F or more than 95 deg F.

C. Install resilient products after other finishing operations, including painting, have been completed.

PART 2 - PRODUCTS

2.1 THERMOSET-RUBBER BASE (RB-1)

A. Basis-of-Design Product: Subject to compliance with requirements, provide Roppe Corporation; 700 Series or a comparable product by one of the following:

1. Johnsonite; a Tarkett company.
2. Approved equivalent.

B. Product Standard: ASTM F1861, Type TS (rubber, vulcanized thermoset), Group I (solid, homogeneous).

1. Style and Location:

a. Style A, Straight: Provide in areas with carpet.
b. Style B, Cove: Provide in areas with resilient floor coverings.

C. Thickness: 0.125 inch.

D. Height: As indicated.

E. Lengths: Cut lengths 48 inches long or coils in manufacturer's standard length.

F. Outside Corners: Preformed.

G. Inside Corners: Preformed.

H. Colors: As indicated by manufacturer's designations.

2.2 THERMOPLASTIC-RUBBER BASE (RB-2)

A. Basis-of-Design Product: Subject to compliance with requirements, provide Roppe Corporation; Contours or a comparable product by one of the following:

1. Armstrong World Industries, Inc.
2. Johnsonite; a Tarkett company.
3. VPI Corporation.
4. Approved equivalent.

B. Product Standard: ASTM F1861, Type TP (rubber, thermoplastic).

1. Group: 2 (layered).
2. Style and Location:
    a. Style D, Sculptured: Provide in areas indicated.

        1) Profile: As indicated.

C. Thickness: 0.125 inch.

D. Height: 4 inches.

E. Lengths: Cut lengths 48 inches long or coils in manufacturer's standard length.

F. Outside Corners: Mitered.

G. Inside Corners: Mitered.

H. Colors: As indicated by manufacturer's designations.

2.3 RUBBER STAIR ACCESSORIES (RST-1)

A. Fire-Test-Response Characteristics: As determined by testing identical products according to ASTM E648 or NFPA 253 by a qualified testing agency.

1. Critical Radiant Flux Classification: Class I, not less than 0.45 W/sq. cm.

B. Basis-of-Design Product: Subject to compliance with requirements, provide Roppe Corporation; 99 - Hammered or a comparable product by one of the following:

1. Armstrong World Industries, Inc.
2. Johnsonite; a Tarkett company.
3. VPI Corporation.
4. Approved equivalent.

C. Stair Treads: ASTM F2169.

1. Type: TS (rubber, vulcanized thermoset).
2. Class: 2 (pattern; embossed, grooved, or ribbed).
3. Group: 2 (with contrasting color for the visually impaired).
4. Nosing Style: Square.
5. Nosing Height: 2 inches.
6. Thickness: 1/4 inch and tapered to back edge.
7. Size: Lengths and depths to fit each stair tread in one piece or, for treads exceeding maximum lengths manufactured, in equal-length units.
8. Integral Risers: Smooth, flat; in height that fully covers substrate.

D. Colors and Patterns: As indicated by manufacturer's designations.

2.4 RUBBER MOLDING ACCESSORY

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Roppe Corporation; Roppe Holding Company.
2. VPI Corporation.
3. Approved equivalent.

B. Description: Rubber carpet edge for glue-down applications, reducer strip for resilient floor covering, joiner for tile and carpet, and transition strips.

C. Profile and Dimensions: As indicated.

D. Locations: Provide rubber molding accessories in areas indicated.

E. Colors and Patterns: As selected by Director’s Representative from manufacturer's full range.

2.5 INSTALLATION MATERIALS

A. Trowelable Leveling and Patching Compounds: Latex-modified, portland-cement-based or blended hydraulic-cement-based formulation provided or approved by resilient-product manufacturer for applications indicated.

B. Adhesives: Water-resistant type recommended by resilient-product manufacturer for resilient products and substrate conditions indicated.

C. Stair-Tread Nose Filler: Two-part epoxy compound recommended by resilient stair-tread manufacturer to fill nosing substrates that do not conform to tread contours.

A. Metal Edge/Transition Strips: Extruded aluminum with clear anodized finish of profile and width shown, of height required to protect exposed edge of carpet, and of maximum lengths to minimize running joints.

1. Basis of Design Manufacturer: Kuberit USA, LLC, a TMT America Company.

a. Profiles: As indicated by manufacturer's designations.

B. Floor Polish: Provide protective, liquid floor-polish products recommended by resilient stair-tread manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

1. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of resilient products.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

1. Installation of resilient products indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Prepare substrates according to manufacturer's written instructions to ensure adhesion of resilient products.

B. Concrete Substrates for Resilient Stair Accessories: Prepare horizontal surfaces according to ASTM F710.

1. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.
2. Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.
3. Alkalinity and Adhesion Testing: Perform tests recommended by manufacturer. Proceed with installation only after substrate alkalinity falls within range on pH scale recommended by manufacturer in writing, but not less than 5 or more than 10 pH.
4. Moisture Testing: Perform tests so that each test area does not exceed 1000 sq. ft., and perform no fewer than three tests in each installation area and with test areas evenly spaced in installation areas.

a. Anhydrous Calcium Chloride Test: ASTM F1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. in 24 hours.
b. Relative Humidity Test: Using in-situ probes, ASTM F2170. Proceed with installation only after substrates have a maximum 75 percent relative humidity level measurement.

C. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound; remove bumps and ridges to produce a uniform and smooth substrate.

D. Do not install resilient products until materials are the same temperature as space where they are to be installed.

1. At least 48 hours in advance of installation, move resilient products and installation materials into spaces where they will be installed.

E. Immediately before installation, sweep and vacuum clean substrates to be covered by resilient products.

3.3 RESILIENT BASE INSTALLATION

A. Comply with manufacturer's written instructions for installing resilient base.

B. Apply resilient base to walls, columns, pilasters, casework and cabinets in toe spaces, and other permanent fixtures in rooms and areas where base is required.

C. Install resilient base in lengths as long as practical without gaps at seams and with tops of adjacent pieces aligned.

D. Tightly adhere resilient base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.

E. Do not stretch resilient base during installation.

F. On masonry surfaces or other similar irregular substrates, fill voids along top edge of resilient base with manufacturer's recommended adhesive filler material.

G. Preformed Corners: Install preformed corners before installing straight pieces.

3.4 RESILIENT ACCESSORY INSTALLATION

A. Comply with manufacturer's written instructions for installing resilient accessories.

B. Resilient Stair Accessories:

1. Use stair-tread-nose filler to fill nosing substrates that do not conform to tread contours.
2. Tightly adhere to substrates throughout length of each piece.

3. For treads installed as separate, equal-length units, install to produce a flush joint between units.

C. Resilient Molding Accessories: Butt to adjacent materials and tightly adhere to substrates throughout length of each piece. Install reducer strips at edges of floor covering that would otherwise be exposed.

3.5 CLEANING AND PROTECTION

A. Comply with manufacturer's written instructions for cleaning and protecting resilient products.

B. Perform the following operations immediately after completing resilient-product installation:

1. Remove adhesive and other blemishes from surfaces.
2. Sweep and vacuum horizontal surfaces thoroughly.
3. Damp-mop horizontal surfaces to remove marks and soil.

C. Protect resilient products from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.

D. Cover resilient products subject to wear and foot traffic until Substantial Completion.

END OF SECTION 096513

SECTION 099123 - INTERIOR PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes surface preparation and the application of paint systems on the following interior substrates:
   1. Steel and iron sprinkler piping.

B. Work under this Contract shall also include, but not necessarily be limited to:

   1. Labor, materials, tools and other equipment, services and supervision required to complete all interior painting and decorating work as indicated on Finish Schedules and to the full extent of the drawings and specifications.
   2. Moisture testing of substrates.
   3. Surface preparation of substrates as required for acceptance of paint, including cleaning, small crack repair, patching, caulking, and making good surfaces and areas to the limits defined under MPI Architectural Painting Manual preparation requirements.
   4. Specific pre-treatments noted herein or specified in the MPI Architectural Painting Manual.
   5. Sealing / priming surfaces for painting in accordance with MPI Architectural Painting Manual requirements.
   6. Provision of safe and adequate ventilation as required over and above temporary ventilation supplied by others, where toxic and/or volatile / flammable materials are being used.

C. Related Requirements:

D. Refer to drawings and schedules (e.g., Finish Schedule) for type, location and extent of interior painting required.

1.3 REFERENCES

A. Master Painters Institute Inc., MPI Architectural Painting Manual. www.specifypaint.us.

1.4 DEFINITIONS

A. MPI Gloss Level 1 (Matte or Flat): Not more than five units at 60 degrees and 10 units at 85 degrees, according to ASTM D523.

B. MPI Gloss Level 2 (Velvet): Not more than 10 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D523.

C. MPI Gloss Level 3 (Eggshell): 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D523.

D. MPI Gloss Level 4 (Satin): 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D523.

E. MPI Gloss Level 5 (Semi-Gloss): 35 to 70 units at 60 degrees, according to ASTM D523.

F. MPI Gloss Level 6 (Gloss): 70 to 85 units at 60 degrees, according to ASTM D523.

G. MPI Gloss Level 7 (High Gloss): More than 85 units at 60 degrees, according to ASTM D523.

1.5 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Product Data: For each type of product. Include preparation requirements and application instructions.

1. Include Printout of current "MPI Approved Products List" for each product category specified, with the proposed product highlighted.
2. Indicate VOC content.

C. Contractor’s Qualifications: Submit documentation demonstrating compliance with requirements in Quality Assurance Article.

1.6 QUALITY ASSURANCE

A. Volatile Organic Compounds (VOCs) Regulatory Requirements: Chapter III of Title 6 of the official compilation of Codes, Rules and Regulations of the State of New York (Title 6 NYCRR), Part 205 Architectural Surface Coatings.

1. Certificate of Compliance: List of each paint product to be delivered and installed. List shall include written certification stating that each paint product listed complies with the VOC regulatory requirements in effect at the time of job site delivery and installation.

B. Contractor shall have a minimum of five (5) years proven satisfactory experience and shall show proof before commencement of work that he will maintain a qualified crew of painters throughout the duration of the work. When requested by the Director’s Representative, Contractor shall provide a list of the last three comparable repainting jobs including, name, location, specifying authority / project manager, start / completion dates and value of the work.

C. All materials, preparation and workmanship shall conform to the standards contained in the latest edition of the Master Painters Institute (MPI) Architectural Painting Manual (herein referred to as the MPI Manual).

D. The painting contractor shall receive written confirmation of the specific surface preparation procedures and primers used for all fabricated steel items from the fabricator / supplier to ascertain appropriate and manufacturer compatible finish coat materials to be used before painting such work.

E. Mockups: Apply mockups of each paint system indicated and each color and finish selected to verify preliminary selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Director's Representative will select one surface to represent surfaces and conditions for application of each paint system.

    a. Vertical and Horizontal Surfaces: Provide samples of at least 100 sq. ft.
    b. Other Items: Director's Representative will designate items or areas required.

2. Final approval of color selections will be based on mockups.

    a. If preliminary color selections are not approved, apply additional mockups of additional colors selected by Director's Representative at no added cost to the State.

3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Director's Representative specifically approves such deviations in writing.
4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

F. Compatibility of Paint Materials: Primers and intermediate paints shall be products manufactured or recommended by the finish paint manufacturer.

1.7 REGULATORY REQUIREMENTS

A. Conform to work place safety regulations for storage, mixing, application and disposal of all paint related materials to requirements of those authorities having jurisdiction.

B. To reduce the amount of contaminants entering waterways, sanitary / storm drain systems or into the ground the following procedures shall be strictly adhered to:

1. Retain cleaning water for water based materials to allow sediments to be filtered out. In no case shall equipment be cleaned using free draining water.
2. Retain cleaners, thinners, solvents and excess paint and place in designated containers and ensure proper disposal.
3. Return solvent and oil-soaked rags used during painting operations for contaminant recovery, proper disposal, or appropriate cleaning and laundering.
4. Dispose of contaminants in an approved legal manner in accordance with hazardous waste regulations.
5. Empty paint cans are to be dry prior to disposal or recycling (where available).
6. Close and seal tightly partly used cans of materials including sealant and adhesive containers and store protected in well ventilated fire safe area at moderate temperature.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver painting materials in sealed, original labeled containers bearing manufacturer's name, brand name, type of paint or coating and color designation, standard compliance, materials content as well as mixing and/or reducing and application requirements.

B. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F.

1. Maintain containers in clean condition, free of foreign materials and residue.
2. Remove rags and waste from storage areas daily.

C. Where toxic and/or volatile / explosive / flammable materials are being used, provide adequate fireproof storage lockers and take necessary precautions and post adequate warnings (e.g. no smoking) as required.

D. Take necessary precautionary and safety measures to prevent fire hazards and spontaneous combustion and to protect the environment from hazard spills. Materials that constitute a fire hazard (paints, solvents, drop clothes, etc.) to be stored in suitable closed and rated containers or removed from the site on a daily basis.

E. Comply with requirements of authorities having jurisdiction, in regard to the use, handling, storage and disposal of hazardous materials.

1.9 FIELD CONDITIONS

A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F.

B. Do not apply paints when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

C. Perform no painting work unless a minimum lighting level of 323 Lux (30-foot candles) is provided on surfaces to be repainted.

D. Apply paint only to dry, clean, and adequately prepared surfaces in areas where dust is no longer generated by construction activities such that airborne particles will not affect the quality of finished surfaces.

E. The following items are not to be painted unless otherwise specified, noted or directed:

1. Exposed stainless steel, chrome, copper, bronze, brass, and aluminum.
2. Steel to be encased in cast-in-place concrete.
3. Top flanges of structural beams and girders in composite concrete-steel construction.
4. Factory prefinished items.
5. Exposed structural wood floor joists, subflooring, rafters, roof sheathing and other framing lumber.
6. Galvanized items not exposed in finished spaces.

1.10 CLOSEOUT

A. Provide certification of sprinkler pipe painting. A licensed master plumber, licensed master fire suppression piping contractor, registered design professional or an individual holding an appropriate certificate of fitness from the Fire Department for the operation and/or maintenance of such system shall certify on forms provided by the department that all required painting has been completed in accordance with Section 903.6 of New York City Building Code. Such certification shall be maintained on the premises and made available for inspection by the Building Department and the Fire Department.

PART 2 - PRODUCTS

2.1 PAINT MATERIALS, GENERAL

A. MPI Standards: Provide products complying with MPI standards indicated and listed in its "MPI Approved Products List."

B. Material Compatibility:

1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
2. For each coat in a paint system, provide products recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.

C. Colors: As indicated in a color schedule.

D. Plumbing Components Colors: Provide paint colors shown on contract drawings or to be selected by the Director from finish paint manufacturers available color selections.

1. Fire Protection Systems: Paint piping, and handles of valves serving the system as specified below:

a. Sprinkler Systems: Red piping, and green valve handles.

b. Sprinklers and cover plates shall be covered to protect from painting and covers shall be removed after painting has been completed. Sprinklers shall be inspected by the Director's Representative or AHJ to confirm no paint has been applied to installed sprinklers. Any sprinklers or cover plates found with field-applied paint shall be replaced per NFPA 13 Section 6.2.6.2.2/6.2.6.2.3.

2. Do not paint equipment with factory finish paint.

2.2 PAINT MATERIAL MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by the following:

1. Benjamin Moore & Co.
2. PPG Architectural.
3. Sherwin-Williams.
4. Or equal.

B. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to products listed in the Interior Painting Schedule for the paint category indicated.

2.3 PAINT MATERIALS

A. Primers and Sealers:

1. Type ISP-3: Primer, Rust-Inhibitive, Water Based MPI #107. Provide one of the following:

    a. Benjamin Moore & Co.: Ultra Spec HP Acrylic Metal Primer.
    b. PPG Architectural: Protective and Marine Coatings Pitt-Tech Int/Ext DTM Industrial Primer.
    c. Sherwin-Williams: Pro Industrial Pro-Cryl Universal Primer.
    d. Approved equivalent.

B. Water-Based Paints:

1. Type IAL-3: Latex, Interior, Semigloss, (Gloss Level 5). MPI #54. Provide one of the following:

    a. Benjamin Moore & Co.: Ultra Spec 500 Interior Semi-Gloss.
    b. PPG Architectural: Speedhide Zero Interior Semi-Gloss.
    c. Sherwin-Williams: ProMar 200 Zero VOC Interior Latex Semi-Gloss.

2.4 SOURCE QUALITY CONTROL

A. Testing of Paint Materials: The Director's Representative reserves the right to invoke the following procedure:

1. The Director's Representative will engage the services of a qualified testing agency to sample paint materials. Contractor will be notified in advance and may be present when samples are taken. If paint materials have already been delivered to Project site, samples may be taken at Project site. Samples will be identified, sealed, and certified by testing agency.
2. Testing agency will perform tests for compliance with product requirements.
3. The Director's Representative may direct Contractor to stop applying paints if test results show materials being used do not comply with product requirements. Contractor shall remove noncomplying paint materials from Project site, pay for testing, and repaint surfaces painted with rejected materials. Contractor will be required to remove rejected materials from previously painted surfaces if, on repainting with complying materials, the two paints are incompatible.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

B. Verify suitability of substrates, including surface conditions and compatibility, with existing finishes and primers.

C. Proceed with coating application only after unsatisfactory conditions have been corrected.

1. Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.

B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.

1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.

C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.

1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.

D. Steel Substrates: Remove rust, loose mill scale, and shop primer, if any. Clean using methods recommended in writing by paint manufacturer but not less than the following:

1. SSPC-SP 2.

3.3 APPLICATION

A. Apply paints according to manufacturer's written instructions and to recommendations in "MPI Manual."

1. Use applicators and techniques suited for paint and substrate indicated.
2. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
3. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.

4. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
5. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.

B. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match color of topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.

C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.

D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

E. Prime coats may be omitted on previously painted surfaces.

F. Plumbing Work:

1. Paint the following work:

a. Sprinkler piping and valves.

3.4 FIELD QUALITY CONTROL

A. Dry Film Thickness Testing: The Director’s Representative may engage the services of a qualified testing and inspecting agency to inspect and test paint for dry film thickness.

1. Contractor shall touch up and restore painted surfaces damaged by testing.
2. If test results show that dry film thickness of applied paint does not comply with paint manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with paint manufacturer's written recommendations.

3.5 CLEANING AND PROTECTION

A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.

B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Director’s Representative, and leave in an undamaged condition.

D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.6 SURFACES, GENERAL

A. Surfaces: Unless otherwise specified or shown on the drawings, paint surfaces as follows:

3.7 INTERIOR PAINTING SCHEDULE

A. Steel Substrates:

1. Latex System:

a. Prime Coat: Primer, rust inhibitive, water based MPI #107 Type ISP-3.
b. Intermediate Coat: Latex, interior, matching topcoat.
c. Topcoat: Latex, interior, semi-gloss (MPI Gloss Level 5), MPI #54. Type IAL-3.

END OF SECTION 099123

SECTION 102219 - DEMOUNTABLE PARTITIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Site-assembled demountable partitions.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.4 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Product Data: For each type of product.

C. Shop Drawings: For demountable partitions.

1. Include plans, elevations, sections, and attachment details at floors, columns, permanent partitions, and ceilings; and method of erection and disassembly.
2. Include diagrams for power-, signal-, and control-wiring raceways; and details of access to raceways.

D. Samples for Initial Selection: For each type of exposed finish.

1. Include Samples of hardware and accessories involving color or finish selection.

E. Samples for Verification: For each type of the following products:

1. Face-Panel Finish: Manufacturer's standard-size unit, but not less than 6 inches square.
2. Linear Trim: 12-inch- long Samples.
3. Door Finish: Manufacturer's standard-size unit, but not less than 3 inches square.
4. Glazing: Manufacturer's standard-size unit, but not less than 3 inches square.
5. Hardware and Accessories: Whole units.

F. Coordination Drawings: Reflected ceiling plans and other details, drawn to scale, on which the following items are shown and coordinated with each other, using input from the installers of the items involved:

1. Suspended-ceiling components and dimensioned ceiling-grid layout.
2. Locations of fixed door and window mullions.
3. Overhead bracing, seismic restraints, and related structural members.
4. Ductwork above ceiling.

G. Qualification Data: For Installer.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance Data: For demountable partitions to include in maintenance manuals.

1.6 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials, from the same production run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Partition Components: Furnish a quantity of each type of full-size unit with installation tools and materials equal to two percent of the amount installed, but no fewer than five units.

1.7 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.

B. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for fabrication and installation.

1. Build mockups for demountable partitions including accessories.

a. Size: 48 inches by 48 inches by full height corner.
b. Each type of exposed construction, corner, door and frame, glass and frame and accessory panel.

2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Director's Representative specifically approves such deviations in writing.
3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.8 FIELD CONDITIONS

A. Finished Spaces: Do not deliver or install demountable partitions until finishes in spaces to receive them are complete, including suspended ceilings, floors, carpeting, and painting.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Surface-Burning Characteristics: Comply with ASTM E84 or UL 723; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Flame-Spread Index: 25 or less.
2. Smoke-Developed Index: 450 or less.

B. Structural Performance: Provide demountable partitions capable of withstanding the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:

1. Load-Bearing Capacity: Not less than 300-lb concentrated proof load when tested according to BIFMA X 5.6.
2. Transverse-Load Capacity:

a. Interior solid wall panel lateral deflection of not more than 1/120 of the overall span when tested under a uniformly distributed load of 5 lb/sq. ft. according to ASTM E72 and per the Uniform Code Table 1604.3.
b. Interior glass wall panel lateral deflection of not more than 1/175 of the overall span when tested under a uniformly distributed load of 5 lb/sq. ft. according to ASTM E72.

1) Glass panels and their support systems shall be designed to withstand a linear load of 50 pounds per linear foot in accordance with Section 4.5.1.1 of ASCE 7.

c. Solid partitions that exceed 6 feet in height, including their finish materials, shall have adequate strength and stiffness to resist a concentrated load of 40 lbs. applied to an 8-inch-diameter area of the fabric face at a height of 54-inches above the floor.

C. Acoustical Performance: Where acoustical rating is indicated, provide demountable-partition assembly tested by a qualified testing agency for sound transmission loss performance according to ASTM E90, calculated according to ASTM E413, and rated for not less than the STC value indicated.

2.2 SITE-ASSEMBLED DEMOUNTABLE PARTITIONS

A. General: Site-assembled, progressive, demountable-partition assembly and components that are the standard products of manufacturer.

1. Basis-of-Design Product: Subject to compliance with requirements, provide KI Wall; Genius Wall or a comparable product by one of the following:

    a. Haworth, Inc.; Enclose.
    b. Infinium Wasll Systems, Inc.; Quantum series.
    c. NxTWall, LLC; View series.
    d. Approved equivalent.

B. Solid Panel:

1. MDF panel with fiberglass insulation.
2. Thickness: 3.5-inches.
3. Panel Widths: Modular as indicated on drawings, except for required filler panels.
4. Acoustical Rating: STC 48.
5. Facing: Color, texture, and pattern as selected by the Director's Representative from manufacturer's full range.

C. Framing: Metallic-coated steel or aluminum studs and top and bottom tracks, 3-1/2 inches deep.

1. Framing Finish: Factory-applied, baked-enamel or powder-coat finish.

D. Trim: Continuous, factory-finished, snap-on type; adjustable for variations in floor level.

1. Trim Material: or aluminum.
2. Panel Joints: Closure trim.
3. Outside Corner Trim: Square.
4. Base Profile: Flush.
5. Ceiling Trim Profile: Flush.
6. Exposed-Metal Trim Finish: Factory-applied, baked-enamel or powder-coat finish.
7. Trim Color: As selected by Director's Representative from manufacturer's full range.

E. Doors: Manufacturer's standard 1-3/4-inch- thick, solid-core wood door construction.

1. Door Operation: Swinging.
2. Door Finish: Wood veneer.

    a. Wood-Veneer Species and Finish: Birch with transparent finish over stain.

F. Door Frames: Manufacturer's standard steel or aluminum frames for 1-3/4-inch doors, factory mortised to receive hardware.

1. Frame Finish: Factory-applied, baked-enamel or powder-coat finish.
2. Frame Color: As selected by Director's Representative from manufacturer's full range.

G. Door Hardware: As specified in Section 087100 "Door Hardware."

H. Glazing Frames: Manufacturer's standard steel or aluminum frames for glazing thickness indicated.

1. Frame Finish: Match door frames.
2. Frame Color: As selected by Director's Representative from manufacturer's full range.

I. Glazing: Laminated clear float glass.

1. Butt-glazed panels.
2. Thickness: 3/8-inch.
3. Safety Glazing: Provide glazing that complies with 16 CFR 1201, Category II or Class A of ANSI Z97.1.

J. Seals: Manufacturer's standard.

K. Electrical Devices: Integral, concealed raceways to serve electrical power and communication devices indicated on Drawings.

1. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

2.3 FABRICATION

A. General: Fabricate demountable walls for installation with concealed fastening devices and pressure-fit members that will not damage ceiling or floor coverings. Fabricate systems for installation with continuous seals at floor, ceiling, and other locations where partitions abut fixed construction.

B. Panels for Site-Assembled Demountable Partitions: Face panels fabricated and finished in modular widths indicated.

1. Transom Panels: Fabricated in material and finish to match wall panels unless otherwise indicated.

C. Finish Facings: Factory apply finish-facing materials with appropriate backings, using mildew-resistant nonstaining adhesive as recommended by finish-material manufacturer's written instructions.

1. Apply facing to panel in one piece, seamless, and with no gaps or overlaps; free of air bubbles, wrinkles, blisters, or other defects.
2. Tightly secure and conceal raw and selvage edges of facing for finished appearance.
3. Where facings with directional or repeating patterns or directional weave are indicated, mark facing top and attach facing in same direction.
4. Match facing pattern 72 inches above finished floor.

D. Wiring: Conceal conductors and cables in raceways. Bundle, lace, and train conductors to terminal points with no excess and without exceeding manufacturer's limitations on bending radii.

2.4 GENERAL FINISH REQUIREMENTS

A. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Examine components before installation. Reject components that are wet, moisture damaged, mold damaged, broken, cracked, chipped, deformed, or unmatched.

C. Examine roughing-in for electrical power to verify actual locations of power connections before partition installation.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install demountable partitions after other finishing operations have been completed.

1. Install partitions rigid, level, plumb, and aligned. Install seals at connections with floors, ceilings, fixed walls, and abutting surfaces to prevent light and sound transmission.
2. Except for filler panels scribed to fixed walls or columns, do not modify manufacturer's standard components.

B. Suspended-Ceiling System: Do not alter suspended-ceiling system.

C. Doors and Frames: Install door-and-frame and glazing-and-glazing-frame assemblies securely anchored to partitions and with doors aligned and fitted. Install and adjust door hardware for proper operation.

D. Electrical Devices: Integral, concealed wiring to serve electrical power and communication devices to provided by the Electrical Work Contract.

3.3 ERECTION TOLERANCES

A. Install each demountable partition so surfaces vary not more than 1/8 inch from the plane formed by the faces of adjacent partitions.

3.4 ADJUSTING

A. Inspect installation, correct misalignments, and tighten loose connections.

B. Doors: Adjust doors to operate smoothly and easily, without binding or warping. Adjust hardware to function smoothly and lubricate as recommended by manufacturer. Verify that latches and locks engage accurately and securely without forcing or binding.

C. Remove and replace defaced or damaged components.

3.5 DEMONSTRATION

A. Engage a Company Field Advisor to train Facility's maintenance personnel to adjust, assemble, disassemble, and maintain demountable partitions.

END OF SECTION 102219

SECTION 122413 - ROLLER WINDOW SHADES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Manually operated roller shades with single rollers.

1.3 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, features, finishes, and operating instructions for roller shades.
2. Include manufacturer’s installation instructions.

C. Shop Drawings: Show fabrication and installation details for roller shades, including shadeband materials, their orientation to rollers, and their seam and batten locations.

D. Samples for Initial Selection: For each type and color of shadeband material.

1. Include Samples of accessories involving color selection.

E. Samples for Verification: For each type of roller shade.

1. Shadeband Material: Not less than 10 inches square. Mark interior face of material if applicable.
2. Roller Shade: Full-size operating unit, not less than 16 inches wide by 36 inches long for each type of roller shade indicated.
3. Installation Accessories: Full-size unit, not less than 10 inches long.

F. Quality Control Submittals

1. Qualification Data: For Installer.

G. Contract Closeout Submittals:

1. Operation and Maintenance Data: For roller shades to include in maintenance manuals.

H. Maintenance Material Submittals:

1. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

a. Roller Shades: Full-size units equal to 5 percent of quantity installed for each size, color, and shadeband material indicated, but no fewer than two units.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Fabricator of products.

B. Product Certificates and Test Reports:

1. Fire-Test-Response Characteristics: Provide shades that are identical to products that pass NFPA 701 Small Scale Test for flame-propagation resistance performed by UL or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify shades with appropriate markings of applicable testing and inspecting agency.
2. Shade Cloth Anti-Microbial Characteristics:

a. ASTM G 21 results for ATCC9642, ATCC9644, ATCC9348, and ATCC9645 indicating “No Growth Contact Area.”

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver roller shades in factory packages, marked with manufacturer, product name, and location of installation using same designations indicated on Drawings.

1.6 FIELD CONDITIONS

A. Environmental Limitations: Do not install roller shades until construction and finish work in spaces, including painting, is complete and dry and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.

B. Field Measurements: Where roller shades are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication and indicate measurements on Shop Drawings. Allow clearances for operating hardware of operable glazed units through entire operating range. Notify Director’s Representative of installation conditions that vary from Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Source Limitations: Obtain roller shades from single source from single manufacturer.

2.2 MANUALLY OPERATED SHADES WITH SINGLE ROLLERS

A. Basis-of-Design Product: Subject to compliance with requirements, provide MechoShade Systems, LLC; Mecho/5x or a comparable product by one of the following:

1. DFB Sales, Inc.; SolRShade.
2. Rollease Acmeda Inc.; R Series.
3. Approved equivalent.

B. Chain-and-Clutch Operating Mechanisms: With continuous-loop bead chain and clutch that stops shade movement when bead chain is released; permanently adjusted and lubricated.

1. Bead Chains: Stainless steel.

a. Loop Length: Full length of roller shade.
b. Limit Stops: Provide upper and lower ball stops.
c. Chain-Retainer Type: Chain tensioner, jamb mounted.

2. Spring Lift-Assist Mechanisms: Manufacturer's standard for balancing roller shade weight and for lifting heavy roller shades.

a. Provide for shadebands that weigh more than 10 lb or for shades as recommended by manufacturer, whichever criterion is more stringent.

C. Rollers: Corrosion-resistant steel or extruded-aluminum tubes of diameters and wall thicknesses required to accommodate operating mechanisms and weights and widths of shadebands indicated without deflection. Provide with permanently lubricated drive-end assemblies and idle-end assemblies designed to facilitate removal of shadebands for service.

1. Roller Drive-End Location: Right side of interior face of shade.
2. Direction of Shadeband Roll: Regular, from back (exterior face) of roller.
3. Shadeband-to-Roller Attachment: Removable spline fitting into integral channel in tube.

D. Mounting Hardware: Brackets or endcaps, corrosion resistant and compatible with roller assembly, operating mechanism, installation accessories, and mounting location and conditions indicated.

E. Roller-Coupling Assemblies: Coordinated with operating mechanism and designed to join up to three inline rollers into a multiband shade that is operated by one roller drive-end assembly.

F. Shadebands:

1. Shadeband Material: See Article 2.3 below..

2. Shadeband Bottom (Hem) Bar: Steel or extruded aluminum.

a. Type: Enclosed in sealed pocket of shadeband material.

G. Installation Accessories:

1. Front Fascia: Aluminum extrusion that conceals front and underside of roller and operating mechanism and attaches to roller endcaps without exposed fasteners.

a. Shape: L-shaped.
b. Height: Manufacturer's standard height required to conceal roller and shadeband assembly when shade is fully open, but not less than 3 inches.

2. Installation Accessories Color and Finish: As selected by the Director’s Representative from manufacturer's full range.

2.3 SHADEBAND MATERIALS

A. Shadeband Material Flame-Resistance Rating: Comply with NFPA 701. Testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

B. Light-Filtering Fabric: Woven fabric, stain and fade resistant.

1. Source: Roller shade manufacturer.
2. Type: 100% Thermoplastic Olefin (TPO).

a. Series: EcoVeil 1550.

3. Weave: Mesh.
4. Thickness: 0.034-inches.
5. Weight: 13.57 oz./sq. yd..
6. Roll Width: 126 inches.
7. Orientation on Shadeband: Up the bolt.
8. Openness Factor: 3 percent.
9. Color: As selected by Director’s Representative from manufacturer's full range.

2.4 ROLLER SHADE FABRICATION

A. Product Safety Standard: Fabricate roller shades to comply with WCMA A 100.1, including requirements for flexible, chain-loop devices; lead content of components; and warning labels.

B. Unit Sizes: Fabricate units in sizes to fill window and other openings as follows, measured at 74 deg F:

1. Between (Inside) Jamb Installation: Width equal to jamb-to-jamb dimension of opening in which shade is installed less 1/4 inch per side or 1/2-inch total, plus or minus 1/8 inch. Length equal to head-to-sill or -floor dimension of opening in which shade is installed less 1/4 inch, plus or minus 1/8 inch.

C. Shadeband Fabrication: Fabricate shadebands without battens or seams to extent possible, except as follows:

1. Vertical Shades: Where width-to-length ratio of shadeband is equal to or greater than 1:4, provide battens and seams at uniform spacings along shadeband length to ensure shadeband tracking and alignment through its full range of movement without distortion of the material.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, operational clearances, and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 ROLLER SHADE INSTALLATION

A. Install roller shades level, plumb, and aligned with adjacent units according to manufacturer's written instructions.

B. Roller Shade Locations: As indicated on Drawings.

3.3 ADJUSTING

A. Adjust and balance roller shades to operate smoothly, easily, safely, and free from binding or malfunction throughout entire operational range.

3.4 CLEANING AND PROTECTION

A. Clean roller shade surfaces, after installation, according to manufacturer's written instructions.

B. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and Installer, that ensure that roller shades are without damage or deterioration at time of Substantial Completion.

C. Replace damaged roller shades that cannot be repaired, in a manner approved by Director’s Representative, before time of Substantial Completion.

3.5 DEMONSTRATION

A. Engage a Company Service Advisor to train Facility maintenance personnel to adjust, operate, and maintain motor-operated roller shades.

END OF SECTION 122413

SECTION 230519 - METERS AND GAGES FOR HVAC PIPING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
   1. Liquid-in-glass thermometers.
   2. Thermowells.
   3. Dial-type pressure gages.
   4. Gage attachments.
   5. Test plugs.
   6. Test-plug kits.

1.3 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions

B. Manufacturer’s installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Product Data: For each type of product.

E. Shop Drawings:

   1. Include diagrams for power, signal, and control wiring.

F. Product Certificates: For each type of meter and gage.

1.4 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For meters and gauges to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 LIQUID-IN-GLASS THERMOMETERS

A. Metal-Case, Industrial-Style, Liquid-in-Glass Thermometers:

1. Standard: ASME B40.200.
2. Case: Cast aluminum; 7-inch nominal size unless otherwise indicated.
3. Case Form: Adjustable angle unless otherwise indicated.
4. Tube: Glass with magnifying lens and blue or red organic liquid.
5. Tube Background: Nonreflective aluminum with permanently etched scale markings graduated in deg F.
6. Window: Glass or plastic.
7. Stem: Aluminum and of length to suit installation.

    a. Design for Air-Duct Installation: With ventilated shroud.
    b. Design for Thermowell Installation: Bare stem.

8. Connector: 1-1/4 inches (32 mm), with ASME B1.1 screw threads.
9. Accuracy: Plus or minus 1 percent of scale range or one scale division, to a maximum of 1.5 percent of scale range.

2.2 DUCT-THERMOMETER MOUNTING BRACKETS

A. Description: Flanged bracket with screw holes, for attachment to air duct and made to hold thermometer stem.

2.3 THERMOWELLS

A. Thermowells:

1. Standard: ASME B40.200.
2. Description: Pressure-tight, socket-type fitting made for insertion in piping tee fitting.
3. Material for Use with Copper Tubing: CNR or CUNI.
4. Material for Use with Steel Piping: CRES or CSA.
5. Type: Stepped shank unless straight or tapered shank is indicated.
6. External Threads: NPS 1/2, NPS 3/4, or NPS 1, ASME B1.20.1 pipe threads.
7. Internal Threads: 1/2, 3/4, and 1 inch, with ASME B1.1 screw threads.
8. Bore: Diameter required to match thermometer bulb or stem.
9. Insertion Length: Length required to match thermometer bulb or stem.
10. Lagging Extension: Include on thermowells for insulated piping and tubing.
11. Bushings: For converting size of thermowell's internal screw thread to size of thermometer connection.

B. Heat-Transfer Medium: Mixture of graphite and glycerin.

2.4 DIAL-TYPE PRESSURE GAGES

A. Direct-Mounted, Metal-Case, Dial-Type Pressure Gages:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

    a. Ashcroft Inc.
    b. Marsh Bellofram.
    c. Trerice, H. O. Co.
    d. Approved equivalent.

2. Standard: ASME B40.100.
3. Case: Liquid-filled type(s); cast aluminum or drawn steel; 6-inch nominal diameter.
4. Pressure-Element Assembly: Bourdon tube unless otherwise indicated.
5. Pressure Connection: Brass, with NPS 1/4 or NPS 1/2, ASME B1.20.1 pipe threads and bottom-outlet type unless back-outlet type is indicated.
6. Movement: Mechanical, with link to pressure element and connection to pointer.
7. Dial: Nonreflective aluminum with permanently etched scale markings graduated in psi.
8. Pointer: Dark-colored metal.
9. Window: Glass or plastic.
10. Ring: Metal.
11. Accuracy: Grade A, plus or minus 1 percent of middle half of scale range.

2.5 GAGE ATTACHMENTS

A. Snubbers: ASME B40.100, brass; with NPS 1/4 or NPS 1/2, ASME B1.20.1 pipe threads and piston or porous-metal-type surge-dampening device. Include extension for use on insulated piping.

B. Siphons: Loop-shaped section of brass pipe with NPS 1/4 or NPS 1/2 pipe threads.

C. Valves: Brass ball, with NPS 1/4 or NPS 1/2, ASME B1.20.1 pipe threads.

2.6 TEST PLUGS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Peterson Equipment Co., Inc.
2. Trerice, H. O. Co.
3. Weiss Instruments, Inc.
4. Approved equivalent.

B. Description: Test-station fitting made for insertion in piping tee fitting.

C. Body: Brass or stainless steel with core inserts and gasketed and threaded cap. Include extended stem on units to be installed in insulated piping.

D. Thread Size: NPS 1/4 or NPS 1/2, ASME B1.20.1 pipe thread.

E. Minimum Pressure and Temperature Rating: 500 psig at 200 deg F.

F. Core Inserts: Chlorosulfonated polyethylene synthetic self-sealing rubber.

2.7 TEST-PLUG KITS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Peterson Equipment Co., Inc.
2. Trerice, H. O. Co.
3. Weiss Instruments, Inc.
4. Approved equivalent.

B. Furnish one test-plug kit(s) containing one thermometer(s), one pressure gage and adapter, and carrying case. Thermometer sensing elements, pressure gage, and adapter probes shall be of diameter to fit test plugs and of length to project into piping.

C. Low-Range Thermometer: Small, bimetallic insertion type with 1- to 2-inch-diameter dial and tapered-end sensing element. Dial range shall be at least 25 to 125 deg F.

D. High-Range Thermometer: Small, bimetallic insertion type with 1- to 2-inch-diameter dial and tapered-end sensing element. Dial range shall be at least 0 to 220 deg F.

E. Pressure Gage: Small, Bourdon-tube insertion type with 2- to 3-inch-diameter dial and probe. Dial range shall be at least 0 to 200 psig.

F. Carrying Case: Metal or plastic, with formed instrument padding.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install thermowells with socket extending to center of pipe and in vertical position in piping tees.

B. Install thermowells of sizes required to match thermometer connectors. Include bushings if required to match sizes.

C. Install thermowells with extension on insulated piping.

D. Fill thermowells with heat-transfer medium.

E. Install direct-mounted thermometers in thermowells and adjust vertical and tilted positions.

F. Install remote-mounted thermometer bulbs in thermowells and install cases on panels; connect cases with tubing and support tubing to prevent kinks. Use minimum tubing length.

G. Install duct-thermometer mounting brackets in walls of ducts. Attach to duct with screws.

H. Install direct-mounted pressure gages in piping tees with pressure gage located on pipe at the most readable position.

I. Install valve and snubber in piping for each pressure gage for fluids (except steam).

J. Install valve and syphon fitting in piping for each pressure gage for steam.

K. Install test plugs in piping tees.

L. Install thermometers in the following locations:
   1. Inlet and outlet of each hydronic coil in air-handling units.
   2. Two inlets and two outlets of each hydronic heat exchanger.
   3. Outside-, return-, supply-, and mixed-air ducts.

M. Install pressure gages in the following locations:

   1. Discharge of each pressure-reducing valve.
   2. Inlet and outlet of each dual temp water.
   3. Suction and discharge of each pump.

CONNECTIONS

N. Install meters and gages adjacent to machines and equipment to allow space for service and maintenance of meters, gages, machines, and equipment.

O. Connect flowmeter-system elements to meters.

P. Connect flowmeter transmitters to meters.

Q. Connect thermal-energy meter transmitters to meters.

3.2 ADJUSTING

A. After installation, calibrate meters according to manufacturer's written instructions.

B. Adjust faces of meters and gages to proper angle for best visibility.

3.3 THERMOMETER SCHEDULE

A. Thermometers at inlet and outlet of each hydronic zone shall be the following:

   1. Liquid-filled, bimetallic-actuated type.
   2. Direct-mounted, metal-case, vapor-actuated type.
   3. Industrial-style, liquid-in-glass type.

B. Thermometers at inlet and outlet of each hydronic coil in air-handling units and built-up central systems shall be the following:

1. Liquid-filled, bimetallic-actuated type.
2. Direct-mounted, metal-case, vapor-actuated type.
3. Industrial-style, liquid-in-glass type.

C. Thermometers at inlets and outlets of each hydronic heat exchanger shall be the following:

1. Liquid-filled, bimetallic-actuated type.
2. Direct-mounted, metal -case, vapor-actuated type.
3. Industrial-style, liquid-in-glass type.

D. Thermometers at inlet and outlet of each hydronic heat-recovery unit shall be the following:

1. Liquid-filled, bimetallic-actuated type.
2. Direct-mounted, metal -case, vapor-actuated type.
3. Industrial-style, liquid-in-glass type.

E. Thermometers at outside-, return-, supply-, and mixed-air ducts shall be the following:

1. Liquid-filled, bimetallic-actuated type.
2. Direct-mounted, metal-case, vapor-actuated type.
3. Industrial-style, liquid-in-glass type.

F. Thermometer stems shall be of length to match thermowell insertion length.

3.4 THERMOMETER SCALE-RANGE SCHEDULE

A. Scale Range for Dual Temp-Water Piping: 0 to plus 200 deg F.

B. Scale Range for Steam and Steam-Condensate Piping: 50 to 400 deg F.

C. Scale Range for Air Ducts: 0 to 100 deg F.

3.5 PRESSURE-GAGE SCHEDULE

A. Pressure gages at discharge of each pressure-reducing valve shall be the following:

1. Liquid-filled, direct-mounted, metal case.
2. Test plug with chlorosulfonated polyethylene synthetic self-sealing rubber inserts.

B. Pressure gages at inlet and outlet of each dual temp-water connection shall be the following:

1. Liquid-filled, direct-mounted, metal case.
2. Test plug with chlorosulfonated polyethylene synthetic self-sealing rubber inserts.

C. Pressure gages at suction and discharge of each pump shall be the following:

1. Liquid-filled, direct-mounted, metal case.
2. Test plug with chlorosulfonated polyethylene synthetic self-sealing rubber inserts.

3.6 PRESSURE-GAGE SCALE-RANGE SCHEDULE

A. Scale Range for Chilled-Water Piping: 0 to 160 psi.

END OF SECTION 230519

SECTION 230523 - GENERAL-DUTY VALVES FOR HVAC PIPING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Ball valves.
   2. Butterfly valves.
   3. Check valves.

1.2 REFERENCES

A. ASTM International:

   1. ASTM A216/A216M - Standard Specification for Steel Castings, Carbon, Suitable for Fusion Welding, for High-Temperature Service.
   2. ASTM D1785 - Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120.
   3. ASTM D4101 - Standard Specification for Propylene Injection and Extrusion Materials.

B. Manufacturers Standardization Society of the Valve and Fittings Industry:

   1. MSS SP 67 - Butterfly Valves.
   2. MSS SP 71 - Cast Iron Swing Check Valves, Flanged and Threaded Ends.
   3. MSS SP 110 - Ball Valves Threaded, Socket-Welding, Solder Joint, Grooved and Flared Ends.

C. Underwriters Laboratories Inc.:

   1. UL 842 - Valves for Flammable Fluids.

1.3 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer’s installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Section 013300 - Submittal Procedures: Requirements for submittals.

E. Product Data: Submit manufacturer’s catalog information with valve data and ratings for each service.

F. Manufacturer's Installation Instructions: Submit hanging and support methods, and joining procedures.

G. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

1.4 CLOSEOUT SUBMITTALS

A. Section 017000 - Execution and Closeout Requirements: Requirements for submittals.

B. Project Record Documents: Record actual locations of valves.

C. Operation and Maintenance Data: Submit installation instructions, spare parts lists, exploded assembly views.

1.5 QUALITY ASSURANCE

A. Perform Work in accordance with State of New York standard.

B. Maintain one copy of each document on site.

1.6 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing Products specified in this section with minimum three years experience.

B. Installer: Company specializing in performing work of this section with minimum 3 years experience.

1.7 PRE-INSTALLATION MEETINGS

A. Section 013000 - Administrative Requirements: Pre-installation meeting.

B. Convene minimum one week prior to commencing work of this section.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Section 016000 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.

B. Accept valves on site in shipping containers with labeling in place. Inspect for damage.

C. Provide temporary protective coating on cast iron and steel valves.

1.9 ENVIRONMENTAL REQUIREMENTS

A. Section 016000 - Product Requirements: Environmental conditions affecting products on site.

B. Do not install valves underground when bedding is wet or frozen.

1.10 WARRANTY

A. Section 017000 - Execution and Closeout Requirements: Requirements for warranties.

B. Furnish five year manufacturer warranty for valves excluding packing.

1.11 EXTRA MATERIALS

A. Section 017000 - Execution and Closeout Requirements: Requirements for extra materials.

B. Furnish two packing kits for each size valve.

PART 2 - PRODUCTS

2.1 BALL VALVES

A. Manufacturers:

1. Substitutions: Section 016000 - Product Requirements.

B. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. NIBCO INC.
2. WATTS; A Watts Water Technologies Company.
3. Approved equivalent.

C. Furnish materials in accordance with State of New York standards.

D. 2 inches and Smaller: MSS SP 110 “Ball Valves Threaded, Socket-Welding, Solder Joint, Grooved and Flared Ends”, 400 psi WOG, two piece bronze body, chrome plated brass ball, full port, teflon seats, blow-out proof stem, solder or threaded ends with union, lever handle.

2.2 BUTTERFLY VALVES

A. Manufacturers:

1. Substitutions: Section 016000 - Product Requirements.

B. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Milwaukee
2. Nibco
3. Watts
4. Approved equivalent.

C. Furnish materials in accordance with State of New York standards.

D. 2-1/2 inches and Larger: MSS SP 67 “Butterfly Valves”, Class 150.

1. Body: Cast or ductile iron, wafer or lug ends, stainless steel stem, extended neck.
2. Disc: Nickel-plated ductile iron, Aluminum bronze, Elastomer coated ductile iron, Chrome plated ductile iron or stainless steel.
3. Seat: Resilient replaceable EPDM, Buna N, or neoprene Viton.
4. Handle and Operator: Infinite position lever handle with memory stop.

2.3 CHECK VALVES

A. Horizontal Swing Check Valves:

B. Manufacturers:

1. Substitutions: Section 016000 - Product Requirements.
2. Manufacturers: Subject to compliance with requirements, provide products by one of the following, but are not limited to, the following:

    a. Milwaukee
    b. Nibco
    c. Watts
    d. Approved equivalent.

3. Furnish materials in accordance with State of New York standards.
4. 2 inches and Smaller: MSS SP 80 “Bronze Gate, Globe, Angle and Check Valves”, Class 150, bronze body and cap, bronze seat, Buna-N or teflon disc, solder or threaded ends.
5. 2-1/2 inches and Larger: MSS SP 71 “Cast Iron Swing Check Valves, Flanged and Threaded Ends”, Class 125, cast iron body, bolted cap, bronze or cast iron disc, renewable disc seal and seat, flanged ends.

C. Spring Loaded Check Valves:

1. Manufacturers:

    a. Substitutions: Section 016000 - Product Requirements.

2. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. Milwaukee
b. Nibco
c. Stockham
d. Approved equivalent.

3. Furnish materials in accordance with State of New York standards.
4. 2 inches and Smaller: MSS SP 80 “Bronze Gate, Globe, Angle and Check Valves”, Class 250, bronze body, in-line spring lift check, silent closing, Buna-N or teflon disc, integral seat, solder or threaded ends.
5. 2-1/2 inches and Larger: MSS SP 71 “Cast Iron Swing Check Valves, Flanged and Threaded Ends”, Class 125 wafer or globe style, cast iron body, bronze seat, center guided bronze disc, stainless steel spring and screws, flanged ends.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Section 013000 - Administrative Requirements: Verification of existing conditions before starting work.

B. Verify piping system is ready for valve installation.

3.2 INSTALLATION

A. Install valves with stems upright or horizontal, not inverted.

B. Install brass male adapters each side of valves in copper piped system. Solder adapters to pipe.

C. Install 3/4 inch ball valves with cap for drains at main shut-off valves, low points of piping, bases of vertical risers, and at equipment.

D. Install valves with clearance for installation of insulation and allowing access.

E. Provide access where valves and fittings are not accessible. Coordinate size and location of access doors with Section 083113**.**

F. Install Work in accordance with State of New York standards.

3.3 VALVE APPLICATIONS

A. Install shutoff and drain valves at locations indicated on Drawings in accordance with this Section.

B. Install ball or butterfly valves for shut-off and to isolate equipment, part of systems, or vertical risers.

C. Install ball or butterfly valves for throttling, bypass, or manual flow control services.

D. Install spring loaded check valves on discharge of water pumps.

E. Install lug end butterfly valves adjacent to equipment when functioning to isolate equipment.

F. Install ball or butterfly valves in dual temp water systems for shut-off service.

END OF SECTION 230523

SECTION 281300 - CARD ACCESS CONTROL SYSTEM

PART 1 - GENERAL

1.1 SYSTEM DESCRIPTION

A. The card access control system controls, monitors and records all valid and invalid entries by personnel using photo ID Weigand Technology access cards at card reader terminals located adjacent to doors requiring secured access. The system also detects security violations at doors within secured areas.

B. The system, when expanded to its full capacity has a minimum of 4200 access cards, 64 card readers, 64 access levels, 8 time zones, 512 alarm points and 192 control points.

C. An attendant at the micro-processor based central controller located in the Director's Representative's designated security office operates the system and observes the status of the doors within the secured areas.

D. When a person wishes to enter a secure area, the person must pass the edge of an access card thru a slot in the card reader terminal at the entry door.

E. The central controller automatically controls door access by comparing security information stored within the access card with information programmed within the central controller (facility code, list of acceptable access card I.D. numbers with their authorized places and times of entry, card access level, etc.).

1. If all conditions are met, a signal is sent by the central controller to the card reader terminal location to operate the release device, allowing the person to open door and enter secure area.

    a. The printer prints out the access card I.D., access point, and time of day. Duplicate information is also displayed on the display screen. The attendant may program the central controller not to print each valid access in real time, but may print access activity as a summary report.
    b. A green lamp illuminates at the card reader terminal indicating that access is granted.
    c. A programmable access time period (1 to 14 seconds) determines the length of time the releasing device will remain open for authorized access.

2. If all conditions are not met, the central controller does not activate the release device but sounds an alarm and prints out the access card I.D., access point, time of day and indication of why access was denied.

    a. Invalid versus valid access attempts are printed and displayed in contrasting color or manner.
    b. A red lamp illuminates at the card reader terminal indicating that access is denied.

3. The attendant, using appropriate keyboard commands may program the central controller to transmit commands to automatically override card reader terminal control so that corresponding release device may be freed to enable door access for long time intervals when card access is not required (terminal override by time control).
4. The attendant may track a specific person through appropriate keyboard commands (entering the person's name), displaying the last door used by that person.

F. Each door is monitored for status (open/close).

1. When a door is opened without authorization an alarm sounds at the central controller. A printout occurs indicating which door is opened, and time of day. Duplicate information is displayed.
2. A programmable alarm shunt timer (2 to 120 seconds) allows door to be opened for authorized card access entry, allowing adequate time to enter without alarming system. An alarm occurs if door remains open beyond the preset alarm period.
3. The system does not alarm when an exit device (pushbutton, panic device) is used to leave a secure area. A programmable alarm shunt timer (2 to 120 seconds) allows door to be opened, allowing adequate time to exit. An alarm occurs if door remains open beyond the preset alarm period.
4. The attendant, using appropriate keyboard commands may program the central controller to automatically suppress alarms to enable door access for long time intervals when monitoring is not required.

G. Alarm conditions are reported audibly, displayed visually, and printed with the time, date, location, alarm code and alarm detector identity. Alarms are silenced through appropriate keyboard commands.

H. Access to the system functions are controlled thru at least 2 levels of access security to prevent program modifications or use by unauthorized personnel. Selective passwords may be used to allow display or control only, and for authorization to change programming parameters.

I. The attendant, using appropriate keyboard commands, may validate or invalidate access card I.D. numbers or status levels and also add, delete or change the status level or time zone assignments for card readers.

J. Upon appropriate keyboard or function command, the central controller displays and prints summary reports, including:

1. Alarms.
2. Access activity at specified card reader.
3. Denied access attempts.
4. Doors in override mode (card access).
5. Doors with alarms suppressed (monitored).
6. All transactions stored in disks (printout can also be selective by date, time, transaction type, card I.D. number, card reader or alarm monitor transactions).
7. All user programmable data.

K. User programmable alarm monitoring and event functions (up to 200) may be programmed by the attendant through appropriate keyboard commands to automatically activate control points upon an alarm condition from monitored points.

L. The central controller maintains a calendar clock for controlling and indicating all time-related functions.

1. The attendant may alter the parameters for time zone control through appropriate keyboard commands to define times when access to secure areas should be granted to card holder groups. A time zone consists of one or more intervals with each interval comprised of a start day and time and a stop day and time. It is possible to assign more than one interval to a single day within one time zone.
2. The attendant may add, omit or alter the parameters for user programmable automatic time-initiated functions (start/stop, on/off, etc.) through appropriate keyboard commands. The control points may also be manually operated through appropriate keyboard commands.

M. All transactions are automatically logged, up to 38,000 events can be permanently recorded on disk storage.

N. Failure of the 120 V ac primary (main) power supply:

1. Automatically transfers the card reader terminals and release devices to the secondary (standby) power supplies which then operate under maximum normal load condition for 12 hours.
2. Automatically transfers the central controller to it's secondary (standby) power supply which maintains vital memory parameters for 12 hours. The central controller, printer and display are non-functional. Failure of the ac operating power is indicated at the central controller.

O. Upon restoration of the primary (main) 120 V ac power supply, the system reverts back to normal operation without attendant intervention or manual re-start procedures.

P. The central controller continuously monitors the communications and data processing cycles of the micro-processor. Upon central controller failure, an audible and visual alarm alerts attendant.

Q. Supervision of signaling line circuits (wiring between card reader terminals, alarm monitor terminals and central controller) indicates trouble conditions at the central controller. A loss of continuity does not impair system operation (loop type circuit for bi-directional communications). A print-out and display occurs to identify faults.

R. Supervision of initiating device circuits (wiring between card reader terminals, alarm monitor terminals and alarm detector) indicates alarm conditions at the central controller when attempts are made to compromise the system by bridging or wiring over alarm detectors or cutting initiating device circuit wiring.

S. A communication failure indication (print-out, display and alarm) occurs at the central controller when a card reader terminal or alarm monitor terminal does not respond with a message each time it is polled by the central controller.

1. A disabled card reader terminal or alarm monitor terminal causes a printout showing the time, address and message indicating that device is disabled. A report is also made when the device is restored to normal.

T. Failure of the central controller results in the card reader terminals switching to an offline mode.

1. Card reader terminals will allow access by reading facility code only.
2. Card reader terminals may be programmed to deny access during failure of the central controller.

1.2 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer's installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Waiver of Submittals: The "Waiver of Certain Submittal Requirements" in Section 013300 does not apply to this Section.

E. Submittals Package: Submit the shop drawings, product data, and quality control submittals specified below at the same time as a package.

F. Shop Drawings:

1. Bill of materials.
2. Composite wiring and/or schematic diagrams of the complete system as proposed to be installed (standard diagrams will not be accepted).
3. Total electrical load of the complete system in supervisory and alarm conditions.
4. Detailed description of system operation (format similar to SYSTEM DESCRIPTION).

G. Product Data:

1. Catalog sheets, specifications and installation instructions.
2. Name, address and telephone number of nearest fully equipped service organization.

H. Quality Control Submittals:

1. Copy of license for installing Security Systems.

    a. Also include copy of identification card issued by the Licensee for each person who will be performing the work.

2. Company Field Advisor Data: Include:

    a. Name, business address and telephone number of Company Field Advisor secured for the required services.
    b. Certified statement from the Company listing the qualifications of the Company Field Advisor.
    c. Services and each product for which authorization is given by the Company, listed specifically for this project.

I. Contract Closeout Submittals:

1. Test Report: System acceptance test report.
2. Certificate: Affidavit, signed by the Company Field Advisor and notarized, certifying that the system meets the contract requirements and is operating properly.
3. Operation and Maintenance Data:

    a. Deliver 2 copies, covering the installed products, to the Director's Representative. Include:

        1) Operation and maintenance data for each product.
        2) Complete point to point wiring diagrams of entire system as installed. Number all conductors and show all terminations and splices. (Numbers shall correspond to numbered tags installed on each conductor.)
        3) Name, address, and telephone number of nearest fully equipped service organization.

1.3 QUALITY ASSURANCE

A. Company Testing Facility: The Company producing the system shall have test facilities available which can demonstrate that the proposed system meets contract requirements.

B. Equipment Qualifications For Products Other Than Those Specified:

1. At the time of submission provide written notice to the Director of the intent to propose an "or equal" for products other than those specified. Make the "or equal" submission in a timely manner to allow the Director sufficient time to review the proposed product, perform inspections and witness test demonstrations.
2. If products other than those specified are proposed for use furnish the name, address, and telephone numbers of at least 5 comparable installations that can prove the proposed products have performed satisfactorily for 3 years. Certify in writing that the owners of the 5 comparable installations will allow inspection of their installation by the Director's Representative and the Company Field Advisor.

    a. Make arrangements with the owners of 2 installations (selected by the Director) for inspection of the installations by the Director's Representative. Also obtain the services of the Company Field Advisor for the proposed products to be present. Notify the Director a minimum of 3 weeks prior to the availability of the installations for the inspection and provide at least one alternative date for each inspection.
    b. Only references from the actual owner or owner's representative (Security Supervisor, Maintenance Supervisor, etc.) will be accepted. References from dealers, system installers or others, who are not the actual owners of the proposed products, are not acceptable.

        1) Verify the accuracy of all references submitted prior to submission and certify in writing that the accuracy of the information has been confirmed.

3. The product manufacturer shall have test facilities available that can demonstrate that the proposed products meet the contract requirements.

a. Make arrangements with the test facility for the Director's Representative to witness test demonstrations. Also obtain the services of the Company Field Advisor for the proposed product to be present at the test facility. Notify the Director a minimum of 3 weeks prior to the availability of the test facility and provide at least one alternative date for the testing.

4. Provide written certification from the manufacturer that the proposed products are compatible for use with all other equipment proposed for use for this system and meet all contract requirements.

C. Company Field Advisor: Secure the services of a Company Field Advisor for a minimum of 16 working hours for the following:

1. Render advice regarding installation and final adjustment of the system.
2. Assist in initial programming of the system.
3. Witness final system test and then certify with an affidavit that the system is installed in accordance with the contract documents and is operating properly.
4. Train facility personnel on the operation and maintenance of the system (minimum of 2 one hour sessions).
5. Explain available service programs to facility supervisory personnel for their consideration.

D. Service Availability: A fully equipped service organization capable of guaranteeing response time within 24 hours to service calls shall be available to service the completed Work.

1.4 MAINTENANCE

A. Spare Parts:

1. 50 percent spare of each type fuse.
2. Film for 400 pictures.
3. 1000 access cards.
4. Laminating material for 1000 cards.
5. 1000 eyelets.
6. 1000 snap on removable clips.
7. 4 spare magnetic switches.
8. 10 digital media storage thumb drives
9. One case 8 ½”x11” printer paper.
10. 10ink cartridges .

PART 2 - PRODUCTS

2.1 CARD ACCESS CONTROL SYSTEM

A. Cardkey Systems’ D-2000 Access Control system, having:

1. Input circuits suitable for operation on 120 V ac primary (main) power supply and 12 or 24 V dc secondary (standby) power supply.

    a. Battery powered secondary (standby) power supply to operate portions of central control as specified under SYSTEM DESCRIPTION.

2. Capacity which includes:

    a. All present functions.
    b. All listed future functions.
    c. Ten percent spare reader and alarm point capacity.

3. Dual disk for program storage, system data file, cardholder data, etc. (second drive operates as backup in the event the primary disk fails and for archiving transaction data).
4. A display which includes a cathode ray tube (CRT) with 9-inch (diagonal) screen, 80 characters per line by 24 line display.
5. Alpha-numeric, English language, dot matrix type, 80 column format printer capable of minimum 180 characters per second.

    a. In addition to transactions and alarms, the printer, once each hour, on the hour, prints the day of year, day of week and time.

6. Power Line Regulator: Cardkey Systems' SB9-A.
7. Desk or surface mounted cabinet containing central controller components.
8. Desk (for CRT, keyboard, printer, storage, etc.):

    a. Steel, minimum 16 gage, painted with rust resisting primer and 2 coats of paint.
    b. Height, depth and width to accommodate equipment mounted thereon.
    c. Components arranged so that all equipment is legible from one control point and can be manned by one attendant.
    d. Desk equipped with writing surface at normal desk height and a storage area consisting of 2 file type drawers or shelves with door.
    e. Chair: Adjustable tilt swivel, open arms, 5 leg pedestal with casters, upholstered foam cushion back and seat. Style to match desk.

9. Terminals:

    a. Card Readers: Cardkey Systems' L9-A-2B, with supervising module S-31.
    b. Alarm Monitors: Cardkey Systems' M-39, with supervising module S-31.
    c. Secondary (Standby) Power Supplies: Sealed, lead-acid gelled electrolyte or maintenance free lead-calcium batteries; Eagle-Picher's Carefree Magnum, Gates' Sealed Rechargeable Batteries 0800, 0810, 0820 (plastic case), Globe's Gel/Cell GC, or Gould's Gelyte PB, with:

        1) Ampere-hour capacity to operate the card reader terminals under conditions specified in SYSTEM DESCRIPTION.
        2) Two rate automatic battery chargers with charging characteristics as recommended by battery manufacturer.
        3) Batteries and chargers integrally mounted in separate locked and monitored cabinets.

10. Access Cards: Cardkey Systems' K21-H (Photo Mask), and J15A laminating material.

2.2 PHOTO IDENTIFICATION EQUIPMENT

A. Photo I.D. System: Polaroid Corp.'s Model 710 Instant ID-3 System, with Type 668 Land pack film.

B. Automatic Punch and Eyelet Setter: Harco Industries Inc.'s (Phoenix, Arizona) AFP-64, with eyelets LA33-74 and snap on removable clips LA33-61.

2.3 DOOR HARDWARE

A. Release Device: Locknetics No. 268-12/10 (voltage to suit system).

1. Power Control Unit for Release Device: Locknetics No. 583ACR3 PXATD-K (voltage to suit system).

B. Secondary (Standby) Power Supplies: Sealed, lead-acid gelled electrolyte or maintenance free lead-calcium batteries; Eagle-Picher's Carefree Magnum, Gates' Sealed Rechargeable Batteries 0800, 0810, 0820 (plastic case), Globe's Gel/Cell GC, or Gould's Gelyte PB, with:

1. Ampere-hour capacity to operate the release devices under conditions specified in SYSTEM DESCRIPTION.
2. Two rate automatic battery chargers with charging characteristics as recommended by battery manufacturer.
3. Batteries and chargers integrally mounted in separate locked and monitored cabinets.

2.4 ALARM DETECTORS

A. Magnetic Switches: Alarm Device Mfg. Co.'s Ademco 39-2.

2.5 WIRING

A. Insulated conductors shall meet requirements of Section 260519 and the following:

1. Signal Line Circuits (Wiring from Central Controller to Card Reader Terminals and Alarm Monitor Terminals): Jacketed, 22 gage insulated copper, individually twisted shielded pairs; Belden Corp.'s 8723.
2. Initiating Device Circuits (Wiring from Card Reader Terminals and Alarm Monitor Terminals to Alarm Detectors): Jacketed, 22 gage insulated copper twisted shielded pair; Belden Corp.'s 8451.
3. Wiring from Card Reader Terminals to Release Devices: Jacketed, 18 gage insulated copper twisted pair; Belden Corp.'s 8461.
4. Terminal, Faceplate and Release Device Grounding: 16 gage insulated copper conductor; Belden Corp.'s 9980.
5. Wiring shall be shielded or unshielded as recommended by the Company producing the system.

6. Number of conductors and conductor size as recommended by the Company producing the system, except that conductor size shall not be less than previously specified.

2.6 TERMINAL LOCATOR

A. Card holder with aluminum or stainless-steel frame, plexiglass front and sheet aluminum card backing plate. Print graphically on card, floor plan showing each card reader terminal, alarm monitor terminal and alarm detector. More than one card and card holder may be used. Minimum size card 8 x 10 inches.

2.7 LABELS

A. Embossed, self adhesive tape, minimum l/4 inch wide, color of tape similar to color of equipment to be labeled (DYMO Labelmaker System).

2.8 ACCESSORIES

A. System shall include all accessories required to perform the functions summarized in SYSTEM DESCRIPTION and indicated on the drawings.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install system in accordance with the Company's printed instructions.

B. Terminal Locator: Install adjacent to central controller.

C. Labels: Install on each card reader terminal, alarm monitor terminal and alarm detector, an identifying label (Card Reader No. 1, etc.).

3.2 FIELD QUALITY CONTROL

A. Preliminary System Test:

1. Preparation: Have the Company Field Advisor adjust the completed system and then operate it long enough to assure that it is performing properly.
2. Run a preliminary test for the purpose of:

    a. Determining whether the system is in a suitable condition to conduct an acceptance test.
    b. Checking and adjusting equipment.
    c. Training facility personnel.

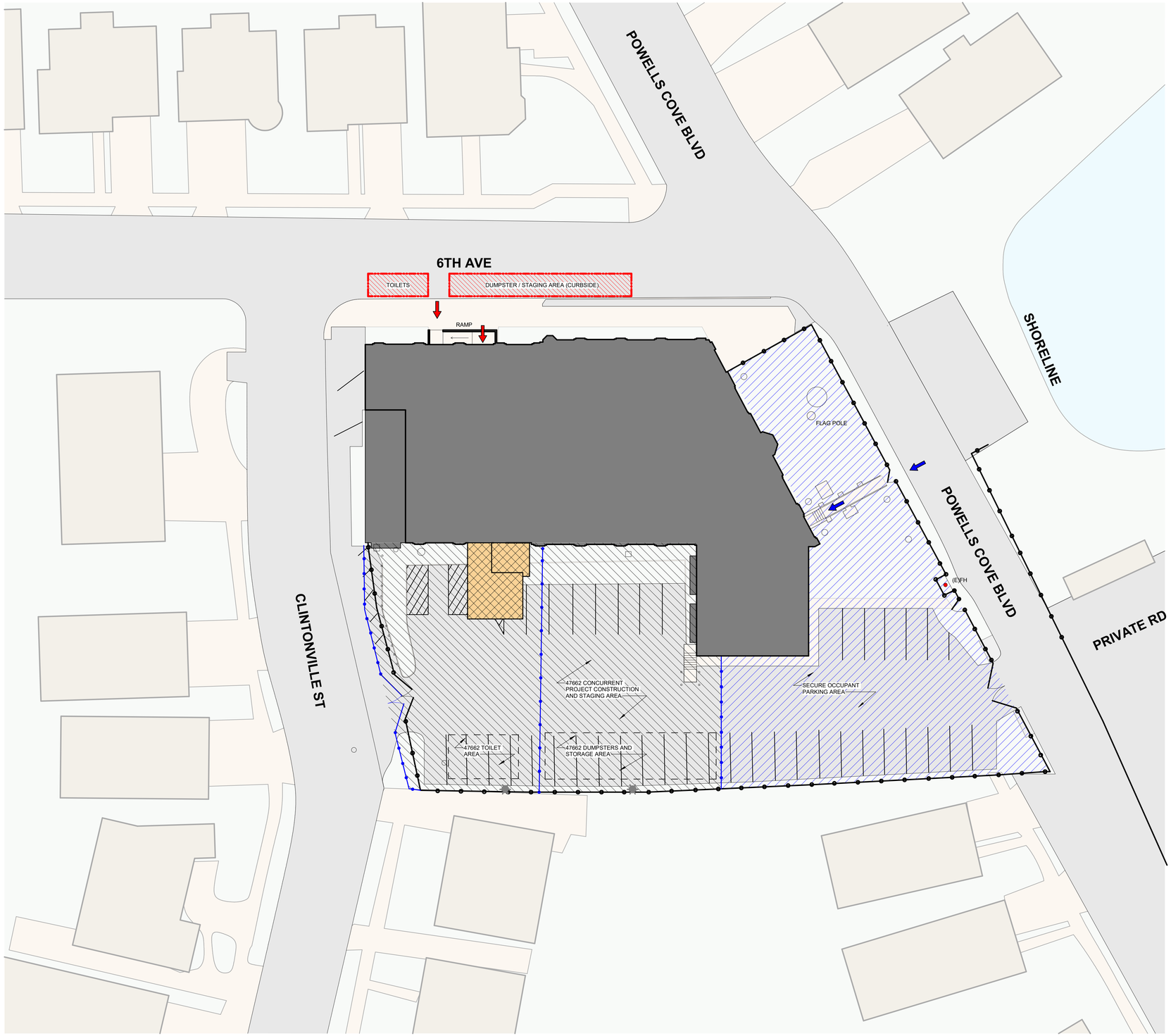
B. System Acceptance Test:

1. Preparation: Notify the Director's Representative at least three working days prior to the test so arrangements can be made to have a Facility Representative witness the test.
2. Make the following tests:

    a. Individually test each door (card access and monitoring).
    b. Test audible alarm.
    c. Test each system function step by step as summarized under SYSTEM DESCRIPTION.

3. Supply all equipment necessary for system adjustment and testing.
4. Submit written report of test results signed by Company Field Advisor and the Director's Representative. Mount a copy of the final report in a plexiglass enclosed frame assembly adjacent to the central controller.
5. Fully adjust and program system to the Director's Representative's satisfaction.

END OF SECTION 281300



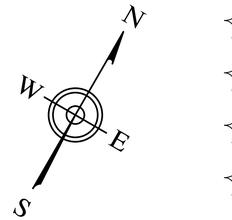
1 STAGING PLAN
SCALE: 1" = 20'-0"

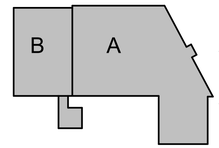
GENERAL NOTES:

1. NO STAGING OR STORAGE WILL BE PERMITTED ON-SITE WITHOUT PRIOR APPROVAL FROM DIRECTOR'S REPRESENTATIVE.
2. ALL CONTRACTS MUST COORDINATE WITH DIRECTOR'S REPRESENTATIVE THE PLACEMENT OF ALL TEMPORARY FACILITIES, EQUIPMENT, AND MATERIAL STORAGE (INCLUDING DUMPSTERS, DELIVERIES, AND TOILET FACILITIES).
3. CONTRACTOR IS RESPONSIBLE FOR OBTAINING NECESSARY PERMITS AND APPROVALS FOR ROAD CLOSURES AND USE OF AREAS IN THE PUBLIC-WAY.
4. RESTORE PAVING AND SITE UPON COMPLETION OF THE WORK.

STAGING PLAN LEGEND:

- GRASS
- WATER
- ASPHALT
- CONCRETE
- EXISTING BUILDINGS
- PROJECT BUILDING
- PROJECT 47662 ADDITION (CONCURRENT PROJECT)
- SECURE OCCUPANT AREA
- PROJECT 47662 CONSTRUCTION AND STAGING AREA
- CONTRACTOR STAGING AREA
- CONTRACTOR BUILDING ACCESS
- SECURE OCCUPANT BUILDING ACCESS
- EXISTING SITE LIGHTING POLE
- EXISTING CHAINLINK FENCE
- EXISTING CHAINLINK FENCE GATE
- PROJECT 47662 TEMPORARY CHAINLINK FENCING
- PROJECT 47662 TEMPORARY CHAINLINK FENCE GATE
- EXISTING FIRE HYDRANT (E)FH





KEY PLAN

NEW YORK STATE | Office of General Services
DESIGN & CONSTRUCTION

CONSULTANT

CERTIFICATE OF AUTHORIZATION No.:

BCA ARCHITECTS ENGINEERS

BUILDING CODE COMPLIANCE:

COMPLIANCE STATEMENT:

TO THE BEST OF THE REGISTERED DESIGN PROFESSIONAL'S KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE DRAWINGS AND / OR SPECIFICATIONS ARE IN COMPLIANCE WITH THE 2020 UNIFORM CODE.

ENERGY CODE COMPLIANCE:

COMPLIANCE STATEMENT:

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WARNING:

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REGISTERED ARCHITECT TRAVIS C OVERTON 035891 STATE OF NEW YORK

REGISTRATION EXPIRES: 03/31/2027

CONTRACT:

GENERAL

TITLE:

RENOVATE INTERIOR SPACES

LOCATION:

STATE ARMORY
150-74 6TH AVE,
WHITESTONE, NY.

CLIENT:

NEW YORK STATE DIVISION OF MILITARY AND NAVAL AFFAIRS

MARK	DATE	DESCRIPTION
2	06/27/2025	ADDENDUM 02
	05/20/2025	BID DOCUMENTS

PROJECT NUMBER: 47592 – C, H, P, E

DESIGNED BY: ICO
DRAWN BY: WTF, DAC
FIELD CHECK:
APPROVED:

SHEET TITLE:

VICINITY AND STAGING PLAN

DRAWING NUMBER:

G-002

SHEET 2 OF 94

24 x 36

CODE DATA:

EXISTING BUILDING CODE SUMMARY				
CHAPTER 3	PROVISIONS FOR ALL COMPLIANCE METHODS	REQUIREMENT		REFERENCE
	ALTERATION, CHANGE OF OCCUPANCY	WORK AREA COMPLIANCE METHOD		301.3.2
	ALTERATIONS	COMPLY WITH BC NYS CHAPTER 11		305.6
	ALTERATIONS CONTAINING PRIMARY FUNCTION	ACCESSIBLE ROUTE, INCLUDING DRINKING FOUNTAINS AND TOILET FACILITIES		305.7
CHAPTER 6	CLASSIFICATION OF WORK	REQUIREMENT		REFERENCE
	ALTERATION LEVEL 2	WORK AREA LESS THAN 50% BUILDING AREA		603
	CHANGE OF OCCUPANCY	COMPLY WITH EBC NYS CHAPTER 10		605.2
CHAPTER 7	ALTERATIONS - LEVEL 1	REQUIREMENT		REFERENCE
	INTERIOR FINISHES	COMPLY WITH BC NYS CHAPTER 8		702.1
	INTERIOR FLOOR FINISH	COMPLY WITH BC NYS 804		702.2
	INTERIOR TRIM	COMPLY WITH BC NYS 806		702.3
	MATERIALS AND METHODS	COMPLY WITH BC NYS, ENERGY CODE, MC NYS, PC NYS		702.6
	FIRE PROTECTION	MAINTAIN EXISTING LEVEL OF PROTECTION		703.1
	MEANS OF EGRESS	MAINTAIN EXISTING LEVEL OF PROTECTION		704.1
	WATER CLOSET REPLACEMENT	COMPLY WITH PC NYS 604.4		708.1
CHAPTER 8	ALTERATIONS - LEVEL 2	REQUIREMENT		REFERENCE
	NEW ELEMENTS, COMPONENTS, SYSTEMS, SPACES	COMPLY WITH BC NYS		801.3
	VERTICAL OPENINGS CONNECTING TWO OR MORE FLOORS	30-MINUTE MINIMUM ENCLOSURE FOR GROUP A AND B OCCUPANCIES		802.2.1
	INTERIOR FINISH	WALLS AND CEILINGS IN EXITS AND CORRIDORS SHALL COMPLY WITH BC NYS		802.4
	AUTOMATIC SPRINKLER SYSTEMS	SECOND FLOOR A-3 WORK AREA REQUIRES SPRINKLER SYSTEM		803.2.2
	MIXED USES	SECOND FLOOR B OCCUPANCY TO HAVE SPRINKLER SYSTEM PER A-3 UNLESS SEPARATED BY 1HR ASSEMBLY		803.2.2.1
	SUPERVISION	REQUIRED SECOND FLOOR SPRINKLER SYSTEM TO BE SUPERVISED IN ACCORDANCE WITH NFPA 72		803.2.4
	HANDRAILS	MINIMUM HANDRAILS ARE EXISTING AND IN SATISFACTORY CONDITION		805.9
	GUARDS	MINIMUM GUARDS EXISTING AND IN SATISFACTORY CONDITION		805.11
	ELECTRICAL	NEW WORK TO COMPLY WITH NFPA 70		807.1
	MECHANICAL	WORK AREA TO BE PROVIDED WITH VENTILATION PER MC NYS		808.1
	LOCAL EXHAUST	RENOVATED TOILET ROOMS TO HAVE LOCAL EXHAUST		808.3
	PLUMBING	NO MINIMUM FIXTURE REQUIREMENT AS OCCUPANT LOAD IS NOT BEING INCREASED		809.1
	ENERGY CONSERVATON	ALTERATIONS SHALL CONFORM TO THE ENERGY CODE, NO REQUIREMENT FOR EXISTING ELEMENTS TO REMAIN		810.1
CHAPTER 9	ALTERATIONS - LEVEL 3 (FOR NEW OCCUPANCIES)	REQUIREMENT		REFERENCE
	MEANS OF EGRESS LIGHTING	EXIT ENCLOSURES TO BE PROVIDED WITH ARTIFICIAL LIGHTING PER BC NYS		905.2
	EXIT SIGNS	MEANS OF EGRESS TO BE PROVIDED WITH EXIT SIGNS PER BC NYS		905.3
CHAPTER 10	CHANGE OF OCCUPANCY	REQUIREMENT		REFERENCE
	ELECTRICAL SERVICE UPGRADE	NEW OCCUPANCIES TO BE UPGRADED TO MEET NFPA 70		1007.3
	NUMBER OF ELECTRICAL OUTLETS	NEW OCCUPANCIES TO COMPLY WITH NFPA 70		1007.4
	MECHANICAL REQUIREMENTS	NEW OCCUPANCIES TO COMPLY WITH MC NYS MECHANICAL REQUIREMENTS		1008.1
	LIGHT AND VENTILATION	NEW OCCUPANCIES TO COMPLY WITH BC NYS		1010.1
	CHANGE OF OCCUPANCY CLASSIFICATION WITH SEPARATION	NEW OCCUPANCIES TO COMPLY WITH EBC NYS CHAPTER 9 AND 10		1011.1.1.2
	FIRE SPRINKLER SYSTEM	PROVIDED THROUGHOUT THE AREA WHERE CHANGE OF OCCUPANCY OCCURS		1011.2.1
	FIRE ALARM AND DETECTION	PROVIDED THROUGHOUT THE AREA WHERE CHANGE OF OCCUPANCY OCCURS		1011.2.2
	INTERIOR FINISH	NEW OCCUPANCIES TO COMPLY WITH BC NYS		1011.3
	MEANS OF EGRESS	EXISTING ELEMENTS COMPLY WITH EBC NYS 905, NEW MEANS OF EGRESS TO COMPLY WITH BC NYS CHAPTER 10		1011.4.2
	EGRESS CAPACITY	NEW OCCUPANCIES SHALL COMPLY WITH BC NYS		1011.4.3
CHAPTER 15	CONSTRUCTION SAFEGUARDS	REQUIREMENT		REFERENCE
	SCOPE	ALL REQUIREMENTS OF THIS CHAPTER APPLY FOR CONSTRUCTION SAFETY AND PROPERTY PROTECTION		1501.1

BUILDING CODE SUMMARY				
CHAPTER 3	OCCUPANCY CLASSIFICATION AND USE	REQUIRED	PROVIDED	REFERENCE
	OCCUPANCY CLASSIFICATION	EXISTING: BUSINESS GROUP B, ASSEMBLY GROUP A-4	BUSINESS GROUP B, ASSEMBLY GROUP A-3	303, 304
	ACCESSORY STORAGE SPACES	STORAGE THAT IS ACCESSORY TO ANOTHER OCCUPANCY SHALL BE PART OF THAT OCCUPANCY		311.1.1
CHAPTER 5	GENERAL BUILDING HEIGHTS AND AREAS	REQUIRED	PROVIDED	REFERENCE
	REQUIRED SEPARATION OF OCCUPANCIES	A TO B: 1-HR (S), 2-HR (NS)	1-HR (S)	TABLE 508.4
CHAPTER 6	TYPES OF CONSTRUCTION	REQUIRED	PROVIDED	REFERENCE
	BUILDING ELEMENTS: TYPE IIB	0-HR	0-HR	TABLE 601
CHAPTER 7	FIRE AND SMOKE PROTECTION FEATURES	REQUIRED		REFERENCE
	NONFIRE-RESISTANCE RATED FLOOR AND ROOF	ASSEMBLIES CONTINUOUS WITHOUT VERTICAL OPENINGS EXCEPT AS PERMITTED BY SECTION 712		711.3
CHAPTER 8	INTERIOR FINISHES	REQUIRED		REFERENCE
	WALL AND CEILING FINISHES (SPRINKLERED)	INTERIOR EXIT STAIRWAYS, EXIT PASSAGEWAYS	B (A-3 OCCUPANCY), B (B OCCUPANCY)	TABLE 803.13
		CORRIDORS AND ENCLOSURE FOR ACCESS STAIRWAYS	B (A-3 OCCUPANCY), C (B OCCUPANCY)	
		ROOMS AND ENCLOSED SPACES	B (A-3 OCCUPANCY), C (B OCCUPANCY)	
	INTERIOR FLOOR FINISH	CLASS II; DOC FF-1 "PILL TEST" AND ASTM D2859 PERMITTED WITH SPRINKLER		804.4.2
CHAPTER 9	FIRE PROTECTION AND LIFE SAFETY SYSTEMS	REQUIRED		REFERENCE
	SUPERVISORY SERVICE	AUTOMATIC SPRINKLER SYSTEMS TO BE MONITORED BY APPROVED SUPERVISING STATION PER NFPA 72		901.6.1
	AUTOMATIC SPRINKLER SYSTEMS, GROUP A-3	WHERE FIRE AREA IS LOCATED ON A FLOOR OTHER THAN THE LEVEL OF EXIT DISCHARGE AND/OR OR 300+ OCCUPANTS		903.2.1.3
	PORTABLE FIRE EXTINGUISHERS	LIGHT HAZARD, 2-A, 3,000 SF/UNIT OF A, 11,250 SF MAXIMUM FLOOR AREA/EXTINGUISHER, 75' MAXIMUM DISTANCE		TABLE 906.3
	FIRE ALARM AND DETECTION SYSTEMS	APPROVED SYSTEM PER BC NYS AND NFPA 72		907.2
CHAPTER 10	MEANS OF EGRESS	REQUIRED		REFERENCE
	AREAS WITHOUT FIXED SEATING	WHERE APPROVED BY THE BUILDING OFFICIAL, ACTUAL NUMBER OF OCCUPANTS SHALL BE PERMITTED		1004.5
	MAXIMUM FLOOR AREA ALLOWANCES PER OCCUPANT	ASSEMBLY WITHOUT FIXED SEATS, STANDING	5 NET	TABLE 1004.5
		ASSEMBLY WITHOUT FIXED SEATS, UNCONCENTRATED	15 NET	
		BUSINESS AREAS	150 GROSS	
	MEANS OF EGRESS SIZING	STAIRWAYS (SPRINKLERED)	0.2"/OCCUPANT; MINIMUM: 44", OR 36" <50 OCCUPANTS	1005.3.1
		OTHER EGRESS COMPONENTS (SPRINKLERED)	0.15"/OCCUPANT; MINIMUM 32" CLEAR DOOR OPENING	1005.3.2
	EGRESS FROM SPACES	2 EXITS MINIMUM IF OCCUPANT LOAD > 49; COMMON PATH OF TRAVEL < 75' FOR ASSEMBLY AND 100' FOR BUSINESS 3 EXITS REQUIRED FOR SPACES WITH AN OCCUPANT LOAD OF 501-1,000		1006.2
	EGRESS FROM STORIES	2 EXITS REQUIRED FOR OCCUPANT LOAD OF 1-500, 3 EXITS FOR 501-1,000, 4 EXITS FOR MORE THAN 1,000		1006.3
	ACCESSIBLE MEANS OF EGRESS	1 MINIMUM; 2 MINIMUM FOR SPACES REQUIRING MORE THAN 1 EXIT PER 1006		1009.1
	EXIT ACCESS TRAVEL DISTANCE (SPRINKLERED)	250' MAXIMUM FOR ASSEMBLY OCCUPANCY, 300' MAXIMUM FOR BUSINESS OCCUPANCY		TABLE 1017.2
	CORRIDOR FIRE RESISTANCE RATING (SPRINKLERED)	0-HR FOR BOTH ASSEMBLY AND BUSINESS OCCUPANCIES		TABLE 1020.1
	DEAD END CORRIDORS (SPRINKLERED)	SHALL NOT EXCEED 20' FOR ASSEMBLY OCCUPANCIES OR 50' FOR BUSINESS OCCUPANCIES		1020.4
CHAPTER 11	ACCESSIBILITY	REQUIRED		REFERENCE
	SCOPE	NEW WORK SHALL COMPLY WITH CHAPTER 11 TO PROVIDE ACCESSIBILITY		1101.1
	TOILET AND BATHING FACILITIES	EACH NEW TOILET ROOM SHALL BE ACCESSIBLE		1109.2
CHAPTER 29	PLUMBING SYSTEMS	REQUIRED		REFERENCE
	FIXTURE CALCULATIONS	OCCUPANT LOAD SHALL NOT BE REQUIRED TO BE DIVIDED IN HALF WHERE APPROVED STATISTICAL DATA INDICATES A DISTRIBUTION OF THE SEXES OF OTHER THAN 50% OF EACH SEX.		2902.1.1

ENERGY CONSERVATION CONSTRUCTION CODE SUMMARY			
CHAPTER 3	CLIMATE ZONES	REQUIRED	REFERENCE
	NEW YORK STATE CLIMATE ZONES BY COUNTY	QUEENS: ZONE 4A	TABLE C301.1
CHAPTER 4	COMMERCIAL ENERGY EFFICIENCY	REQUIRED	REFERENCE
	BUILDING ENVELOPE REQUIREMENTS	R-30 CONTINUOUS INSULATION FOR INSULATION ENTIRELY ABOVE ROOF DECK	C402.1.3
	BUILDING MECHANICAL SYSTEMS	ALTERATIONS SHALL COMPLY WITH C403	C403.1
	SERVICE WATER HEATING	NEW SYSTEMS SHALL COMPLY WITH C404	C404.1
	ELECTRICAL POWER AND LIGHTING SYSTEMS	NEW SYSTEMS SHALL COMPLY WITH C405	C405.1
CHAPTER 5	EXISTING BUILDINGS	REQUIRED	REFERENCE
	EXISTING BUILDINGS	EXCEPT FOR CHAPTER 5, THIS CODE SHALL NOT REQUIRE ALTERATION OF AN EXISTING BUILDING OR SYSTEM	C501.2
	COMPLIANCE	CONFORM TO ALTERATIONS REQUIREMENTS OF ECCC NYS, BC NYS, EBC NYS, FC NYS, MC NYS, PC NYS, AND NFPA 70	C501.4
	ALTERATIONS	ALTERATIONS SHALL NOT MAKE THE BUILDING LESS CONFORMING, NEW WORK SHALL COMPLY WITH C503	C503.1

24 x 36

APPLICABLE CODE REFERENCE

2020 BUILDING CODE OF NEW YORK STATE (BC NYS)
2020 EXISTING BUILDING CODE OF NEW YORK STATE (EBC NYS)
2020 ENERGY CONSERVATION CONSTRUCTION CODE OF NEW YORK STATE (ECCC NYS)
2020 FIRE CODE OF NEW YORK STATE (FC NYS)
2020 MECHANICAL CODE OF NEW YORK STATE (MC NYS)
2020 PLUMBING CODE OF NEW YORK STATE (PC NYS)
OTHER STANDARDS REFERENCED IN 19 NYCRR PARTS 1221, 1223, 1225, & 1227
2009 ICC A117.1 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES
2010 ADA STANDARDS FOR ACCESSIBLE DESIGN
AMERICANS WITH DISABILITIES ACT OF 1990, AS AMENDED 2008 (ADA)
2017 NATIONAL ELECTRICAL CODE, NFPA 70 (NEC)
2018 STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE 70E
2016 NATIONAL FIRE ALARM CODE, NFPA 72
2 2016 NFPA 13 STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS

DESIGN NARRATIVE

PARTIAL INTERIOR RENOVATION OF A TWO-STORY MASONRY AND STEEL BUILDING ORIGINALLY CONSTRUCTED IN 1933. THE PRIMARY SCOPE OF WORK FOR THIS PROJECT INCLUDES EXTENSIVE OFFICE RENOVATION AND RECONFIGURATION FOR THE FIRST AND SECOND FLOORS ON THE WEST SIDE OF THE FACILITY. THE WORK INCLUDES A RATED STAIR ENCLOSURE TO MITIGATE AN OPEN STAIR CONDITION AND IMPROVE LIFE SAFETY, ALONG WITH ADDITIONAL EGRESS IMPROVEMENTS. RENOVATION WILL ALSO EXPAND ACCESSIBILITY. A NEW SPRINKLER AND FIRE ALARM SYSTEM WILL BE INCLUDED, ALONG WITH MECHANICAL, PLUMBING, AND ELECTRICAL UPGRADES ASSOCIATED WITH THE OFFICE RENOVATIONS. HAZARDOUS MATERIAL ABATEMENT WILL BE NECESSARY THROUGHOUT THE WORK AREA.

WORK INVOLVED: GENERAL CONSTRUCTION, HVAC, PLUMBING, ELECTRICAL.

CALCULATED OCCUPANT LOAD

FLOOR	OCCUPANCY/USE	ROOMS	AREA	GROSS/NET	FACTOR	OCCUPANT LOAD
B	BUSINESS (B)	TOILETS, FITNESS, JANITOR, MAINTENANCE, CORRIDORS	4,692	GROSS	150	32
B	BUSINESS (B)	LOCKER ROOMS	3,200	GROSS	50	64
B	BUSINESS (B)	ACCESSORY STORAGE, UTILITY	4,970	GROSS	300	17
					BASEMENT TOTAL:	113
1	BUSINESS (B)	OFFICES, JANITOR, CORRIDORS	8,448	GROSS	150	57
1	ASSEMBLY(A3)	DRILL HALL, TOILETS	4,826	NET	5	966
					FIRST FLOOR TOTAL:	1,023
2	BUSINESS (B)	OFFICES, TOILETS, JANITOR, CORRIDORS	3,572	GROSS	150	24
2	ASSEMBLY(A3)	CONFERENCE ROOM, CLASSROOMS	1,184	NET	15	79
					SECOND FLOOR TOTAL:	103
					BUILDING TOTAL:	1,239

PLUMBING FIXTURE REQUIREMENTS

OCCUPANCY	DESCRIPTION	WATER CLOSETS		LAVATORIES		SHOWERS	DRINKING FOUNTAIN	SERVICE SINKS
		M	F	M	F			
ASSEMBLY	DRILL HALL, CONFERENCE	1/125	1/64	1/200		N/A	1/500	1
BUSINESS	OFFICES	*		**		N/A	1/100	1

* 1 PER 25 FOR THE FIRST 50 AND 1 PER 50 FOR THE REMAINDER EXCEEDING 50
** 1 PER 40 FOR THE FIRST 80 AND 1 PER 80 FOR THE REMAINDER EXCEEDING 80
NOTE: ASSUME 2/3 MALE AND 1/3 FEMALE RATIO PER DMNA.

PLUMBING FIXTURE CALCULATIONS

	ASSEMBLY A-3 (DRILL HALL, CONFERENCE/CLASSROOMS)		BUSINESS B (OFFICES)	
OCCUPANT LOAD (1,239 TOTAL)	1045 (690 MALE / 355 FEMALE)		194 (128 MALE / 66 FEMALE)	
FIXTURE	REQUIRED	PROVIDED	REQUIRED	PROVIDED
WATER CLOSET (MALE)	6	2	4	7
WATER CLOSET (FEMALE)	6	2	3	5
LAVATORY (MALE)	4	2	3	5
LAVATORY (FEMALE)	2	2	2	5
SHOWERS (MALE)	N/A	N/A	N/A	4
SHOWERS (FEMALE)	N/A	N/A	N/A	3
DRINKING FOUNTAINS	2	1	2	2
SERVICE SINKS	1	1	1	2

NOTE 1: NEW CONSTRUCTION FIXTURE COUNTS ARE NOT REQUIRED PER EBC NYS AS FACILITY OCCUPANT LOAD IS NOT BEING INCREASED. ALTERATIONS INCREASE EXISTING FIXTURE COUNT BY 2 WATER CLOSETS, 1 LAVATORY, AND 1 DRINKING FOUNTAIN. UNREQUIRED SHOWERS ARE REDUCED BY 2.
NOTE 2: B AND A-3 USE AREAS OVERLAP IN FUNCTION AND UTILIZATION. ANY EXCESS FIXTURES ASSOCIATED WITH ONE USE AREA ARE AVAILABLE FOR UTILIZATION BY THE OTHER USE AREA.

CONSTRUCTION SAFEGUARDS:

1. SCOPE. THE SAFETY OF THE CONSTRUCTION AREA AND ADJACENT PUBLIC AND PRIVATE PROPERTIES SAFETY TO BE PROTECTED DURING CONSTRUCTION AND DEMOLITION AS FOLLOWS, IN ACCORDANCE WITH THE 2020 EXISTING CODE OF NEW YORK STATE (EBC), CHAPTER 15 AND THE 2020 FIRE CODE OF NEW YORK STATE (FC), CHAPTER 33. COMPLIANCE WITH NFPA 241 IS REQUIRED FOR ITEMS NOT SPECIFICALLY ADDRESSED. THIS SPECIFICATION PRESCRIBES MINIMUM SAFEGUARDS FOR CONSTRUCTION TO PROVIDE REASONABLE SAFETY TO LIFE AND PROPERTY FROM FIRE DURING SUCH OPERATIONS.
2. CONSTRUCTION INCLUDES ANY NEW CONSTRUCTION, DEMOLITION, REMODELING, ALTERATIONS, REPAIRS OR ADDITIONS TO ANY BUILDING OR STRUCTURE.
3. MAINTENANCE OF SAFE CONDITIONS. REQUIRED SAFETY ELEMENTS SUCH AS EXITS, EXISTING STRUCTURAL MEMBERS, FIRE PROTECTION DEVICES AND SANITARY SAFEGUARDS TO BE MAINTAINED AT ALL TIMES, EXCEPT WHERE THE BUILDING IS NOT OCCUPIED OR WHERE SUCH REQUIRED ELEMENTS ARE BEING ALTERED OR REPAIRED AND ADEQUATE SUBSTITUTE PROVISIONS ARE MADE.
4. MEANS OF EGRESS. AN APPROVED PERMANENT OR TEMPORARY MEANS OF EGRESS TO BE MAINTAINED. AN EGRESS COMPONENT SHALL NOT BE DESTROYED UNLESS AND UNTIL A SUBSTITUTE MEANS OF EGRESS HAS BEEN PROVIDED.
5. MATERIAL HANDLING. EQUIPMENT AND MATERIALS TO BE STORED AND PLACED, AND WASTE TO BE REMOVED, SO AS NOT TO ENDANGER THE PERSONS OR PROPERTY OR TO IMPEDE A MEANS OF EGRESS. PLACE MATERIAL AND WASTE SO AS NOT TO OBSTRUCT ACCESS TO FIRE HYDRANTS, STANDPIPES, FIRE EXTINGUISHERS, FIRE OR POLICE ALARM BOXES, CATCH BASINS, MANHOLES, RELEVANT UTILITY STRUCTURES, TRAFFIC OR OBSERVATION OF TRAFFIC SIGNALS. COMBUSTIBLE DEBRIS SHALL NOT BE ACCUMULATED ON SITE, AND TO BE REMOVED AT THE END OF EACH WORK SHIFT. RUBBISH CONTAINERS WITH A CAPACITY EXCEEDING 5.33 CUBIC FEET (40 GALLONS OR .15 CUBIC METERS) SHALL HAVE TIGHT-FITTING OR SELF CLOSING LIDS, AND BE CONSTRUCTED OF NONCOMBUSTIBLE MATERIAL OR MATERIAL THAT MEETS FC SECTION 3304.2.3 (2). MATERIAL SUSCEPTIBLE TO SPONTANEOUS IGNITION MUST BE STORED IN A LISTED DISPOSAL CONTAINER.
6. FIRE SAFETY DURING CONSTRUCTION AND DEMOLITION. FIRE SAFETY SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF THE UNIFORM CODE, INCLUDING EBC CHAPTER 15 AND FC CHAPTER 33.
   A. FIRE EXTINGUISHERS. PROVIDE PORTABLE FIRE EXTINGUISHERS FOR PROTECTION DURING CONSTRUCTION AND DEMOLITION WHERE COMBUSTIBLE MATERIALS HAVE ACCUMULATED AND IN EVERY STORAGE AND CONSTRUCTION SHED. EXTINGUISHERS SHALL COMPLY WITH FC SECTION 906, SIZED FOR ORDINARY HAZARD UNLESS GREATER HAZARD IS SPECIFIED. ADDITIONAL PORTABLE FIRE EXTINGUISHERS TO BE PROVIDED WHERE SPECIAL HAZARDS EXIST, SUCH AS THE STORAGE AND USE OF FLAMMABLE AND COMBUSTIBLE LIQUIDS.
   B. ANY BURNING, CUTTING OR WELDING SHALL REQUIRE A PERMIT AND APPROVAL.
   C. TEMPORARY ELECTRICAL INSTALLATIONS SHALL COMPLY WITH NFPA 70.

GENERAL CONSTRUCTION NOTES:

1. EXISTING CONDITIONS NOTED ARE AS OF A SITE OBSERVATION. VERIFY ALL EXISTING CONDITIONS PRIOR TO BEGINNING WORK. RESOLVE ANY DISCREPANCY BETWEEN CONSTRUCTION DOCUMENTS AND ACTUAL CONDITIONS WITH THE DIRECTOR'S REPRESENTATIVE. VERIFY ALL EXISTING CONDITIONS PRIOR TO BEGINNING WORK. ANY DISCREPANCY BETWEEN CONSTRUCTION DOCUMENTS AND ACTUAL CONDITIONS ARE TO BE COORDINATED AND RESOLVED WITH THE DIRECTOR'S REPRESENTATIVE.
2. DO NOT SCALE DRAWINGS. DIRECT ALL DIMENSIONAL DISCREPANCIES AND QUESTIONS TO THE DIRECTOR'S REPRESENTATIVE ON ANY DIMENSIONAL DISCREPANCIES PRIOR TO PROCEEDING WITH THE WORK.
3. ALL MATERIALS ARE TO BE SPECIFIED, OR "AS EQUAL" APPROVED BY THE DIRECTOR'S REPRESENTATIVE. MATERIALS SPECIFIED INDICATE QUALITY INTENT THAT WILL BE USED AS A BASIS FOR REVIEW OF MATERIAL SUBSTITUTION.
4. PROVIDE TEMPORARY BARRICADES AROUND WORK AREAS AND OPEN EXCAVATIONS TO PREVENT UNAUTHORIZED PERSONS FROM ENTERING THE WORK SITE.
5. KEEP OPEN WALKWAYS FREE OF CONSTRUCTION DEBRIS, TYPICAL.
6. CLEAN UP THE WORK SITE AT THE END OF EACH DAY TO ENSURE THAT ALL CONSTRUCTION DEBRIS IS PROPERLY DISPOSED ON IN DUMPSTERS. FULL DUMPSTERS ARE TO BE REMOVED THAT DAY AND DISPOSED OF PROPERLY. COORDINATE WITH DIRECTOR'S REPRESENTATIVE THE LOCATION OF ALL DUMPSTERS ONSITE INCLUDING ACCESS REQUIREMENTS.
7. ALL CONSTRUCTION TO COMPLY WITH APPLICABLE BUILDING CODES LISTED ON THIS SHEET, AS WELL AS ANY APPLICABLE LAWS, STATUTES AND ALL LOCAL RULES AND REGULATIONS.
8. COMPLY WITH ALL LAWS, RULES, ORDINANCES AND ORDERS OF AN PUBLIC AUTHORITY BEARING ON THE PERFORMANCE OF THE WORK.
9. PRIOR TO STARTING WORK, SUBMIT FOR DIRECTOR'S REPRESENTATIVE APPROVAL A DETAILED SCHEDULE INDICATING ALL WORK THAT MIGHT AFFECT THE ADJACENT USE OF THE BUILDING/FACILITY.
10. DO NOT INTERRUPT EXISTING UTILITY SERVICE WITHOUT AUTHORIZATION FROM THE DIRECTOR'S REPRESENTATIVE.
11. STORE MATERIALS IN AREAS DESIGNATED BY THE DIRECTOR'S REPRESENTATIVE. DELIVERY OF MATERIALS ARE TO BE AS DIRECTED BY THE DIRECTOR'S REPRESENTATIVE.
12. ALL EXISTING BUILDING ELEMENTS TO REMAIN ARE TO BE APPROPRIATELY PROTECTED FOR THE DURATION OF THE CONSTRUCTION PERIOD. ANY DAMAGES INCURRED DURING CONSTRUCTION WILL E REPAIRED AT THE CONTRACTOR'S EXPENSE.
13. PROTECT FROM DAMAGE ALL ADJACENT AREAS TO REMAIN, SUCH AS LANDSCAPING, EXTERIOR AND INTERIOR BUILDING SURFACES.

NEW YORK STATE | Office of General Services
DESIGN & CONSTRUCTION

CONSULTANT
CERTIFICATE OF AUTHORIZATION No.:
BCA ARCHITECTS ENGINEERS

BUILDING CODE COMPLIANCE:

COMPLIANCE STATEMENT:

TO THE BEST OF THE REGISTERED DESIGN PROFESSIONAL'S KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE DRAWINGS AND / OR SPECIFICATIONS ARE IN COMPLIANCE WITH THE 2020 UNIFORM CODE.

ENERGY CODE COMPLIANCE:

COMPLIANCE STATEMENT:

TO THE BEST OF THE REGISTERED DESIGN PROFESSIONAL'S KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE DRAWINGS AND / OR SPECIFICATIONS ARE IN COMPLIANCE WITH THE 2020 ENERGY CODE.

REGISTERED ARCHITECT TRAVIS C OVERTON 035891 STATE OF NEW YORK
REGISTRATION EXPIRES: 03/31/2027

CONTRACT:
GENERAL

TITLE:
RENOVATE INTERIOR SPACES

LOCATION:
STATE ARMORY
150-74 6TH AVE,
WHITESTONE, NY.

CLIENT:
NEW YORK STATE DIVISION OF MILITARY AND NAVAL AFFAIRS

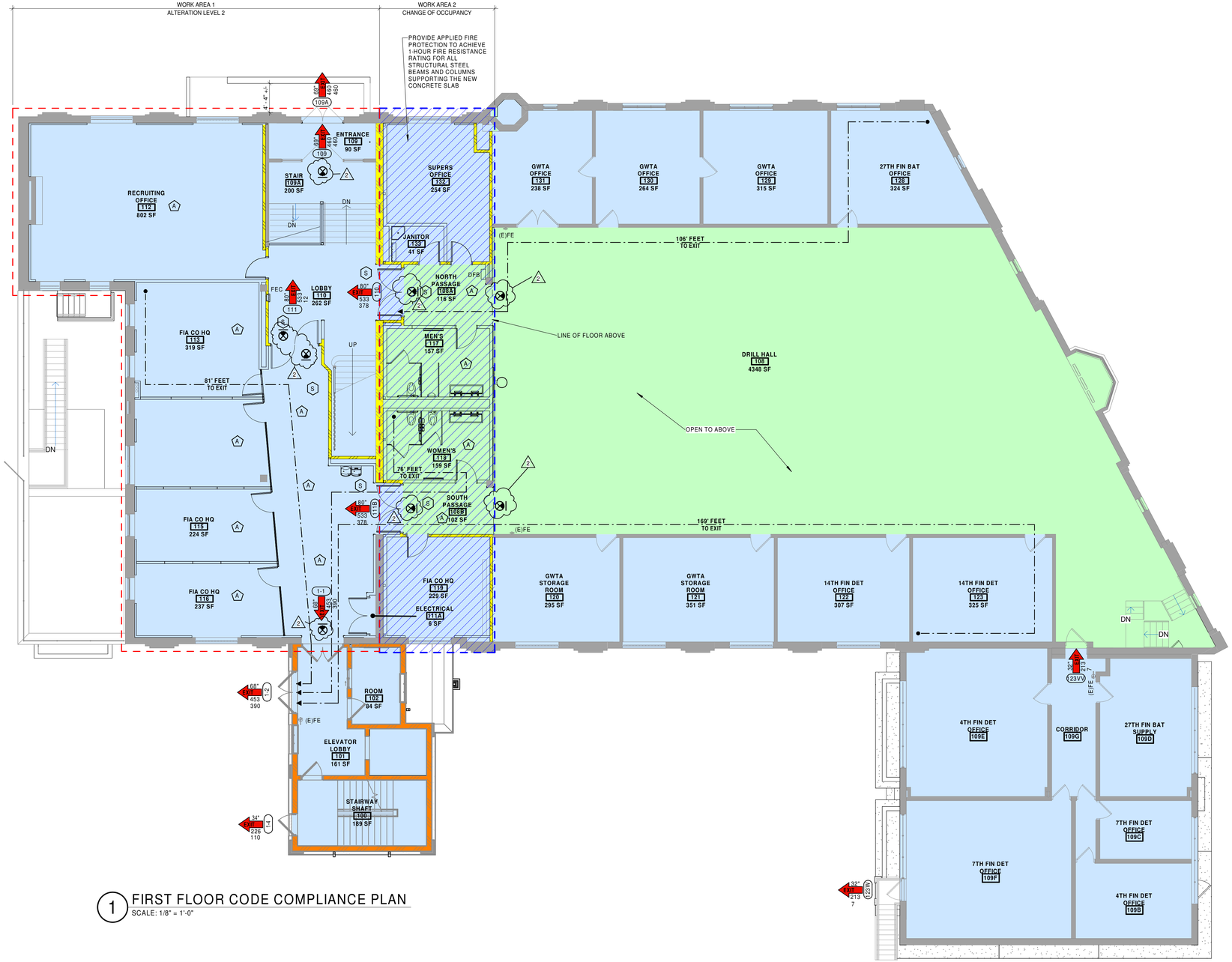
MARK	DATE	DESCRIPTION
2	06/27/2025	ADDENDUM 02
	05/20/2025	BID DOCUMENTS

PROJECT NUMBER:	47592 – C, H, P, E
DESIGNED BY:	TCO
DRAWN BY:	EAV
FIELD CHECK:	
APPROVED:	

SHEET TITLE:
GENERAL NOTES AND CODE COMPLIANCE

DRAWING NUMBER:
G-003

SHEET 3 OF 94



1 FIRST FLOOR CODE COMPLIANCE PLAN
SCALE: 1/8" = 1'-0"

CODE COMPLIANCE LEGEND:

EXIT TAG

EXIT WIDTH
EXIT CAPACITY PROVIDED
EXIT CAPACITY REQUIRED

TRAVEL DISTANCES:

CP = 12'
CP = COMMON PATH OF EGRESS TRAVEL DISTANCE
12' FEET TO EXIT
EGRESS TRAVEL DISTANCE

SYMBOLS:

(E)FE = EXISTING FIRE EXTINGUISHER
FE = FIRE EXTINGUISHER
DFB = DEFIBRILLATOR
FEC = FIRE EXTINGUISHER CABINET (RECESSED)

FIRE RATED ASSEMBLIES

1 HOUR FIRE BARRIER
1 HOUR FIRE PARTITION
2 HOUR FIRE BARRIER

OCCUPANCY AREAS:

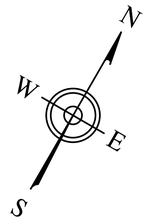
ASSEMBLY AREA
BUSINESS AREA

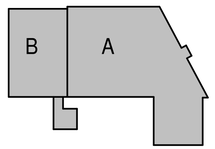
ELECTRICAL SYMBOLS:

EXIT LIGHT - DOUBLE FACED
EXIT LIGHT - SINGLE FACE
SMOKE DETECTOR
FIRE ALARM NOTIFICATION DEVICE
FIRE ALARM PULL STATION

CODE COMPLIANCE NOTES:

1. CONSTRUCTION (C), HVAC (H), PLUMBING (P), AND ELECTRICAL (E) CONTRACTORS SHALL COORDINATE WORK WITH ALL OTHER CONTRACTS.
2. PROVIDE THROUGH-PENETRATION AND MEMBRANE FIRESTOPPING SYSTEMS FOR ALL WORK PENETRATING VERTICAL AND HORIZONTAL FIRE-RATED AND SMOKE-RATED ASSEMBLIES, REGARDLESS OF WHETHER THE ASSEMBLY IS NEW OR EXISTING. PROVIDE FIRESTOPPING SYSTEMS AT OPENINGS (VOIDS) MADE BY REMOVALS WORK AT FIRE-RATED AND SMOKE-RATED ASSEMBLIES. PROVIDE JOINT FIRESTOPPING SYSTEMS AT ALL FIRE-RATED INTERSECTIONS AND JUNCTURES, BETWEEN FIRE-RATED ASSEMBLIES, AND BETWEEN FIRE-RATED TO NON-FIRE-RATED ASSEMBLIES. REFERENCE CODE COMPLIANCE DRAWINGS FOR FIRE-RATED AND SMOKE-RATED ASSEMBLIES AND THEIR LOCATIONS. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
3. FLOOR AND CEILING ASSEMBLIES BETWEEN BUSINESS (B) AND ASSEMBLY (A) OCCUPANCIES ARE 1-HOUR RATED; FIRESTOP PENETRATIONS THROUGH THOSE ASSEMBLIES ACCORDINGLY.
4. IDENTIFY ALL RATED WALL ASSEMBLIES, REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
5. MAINTAIN MEANS OF EGRESS AND REQUIRED ACCESSIBLE MEANS OF EGRESS AT ALL TIMES DURING REMOVALS AND CONSTRUCTION ACTIVITIES IN ACCORDANCE WITH THE CURRENT VERSION OF THE EXISTING BUILDING CODE OF NEW YORK STATE.





KEY PLAN

NEW YORK STATE Office of General Services
DESIGN & CONSTRUCTION

CONSULTANT

CERTIFICATE OF AUTHORIZATION No.:

BCA ARCHITECTS ENGINEERS

BUILDING CODE COMPLIANCE:

COMPLIANCE STATEMENT:

TO THE BEST OF THE REGISTERED DESIGN PROFESSIONAL'S KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE DRAWINGS AND / OR SPECIFICATIONS ARE IN COMPLIANCE WITH THE 2020 UNIFORM CODE.

ENERGY CODE COMPLIANCE:

COMPLIANCE STATEMENT:

TO THE BEST OF THE REGISTERED DESIGN PROFESSIONAL'S KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE DRAWINGS AND / OR SPECIFICATIONS ARE IN COMPLIANCE WITH THE 2020 ENERGY CODE.

WARNING:

THE ALTERATION OF THIS MATERIAL IN ANY WAY, UNLESS DONE UNDER THE DIRECTION OF A COMPARABLE PROFESSIONAL, I.E. ARCHITECT FOR AN ARCHITECT, ENGINEER FOR AN ENGINEER OR LANDSCAPE ARCHITECT FOR A LANDSCAPE ARCHITECT, IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND/OR REGULATIONS AND IS A CLASS 'A' MISDEMEANOR.

REGISTERED ARCHITECT TRAVIS C OVERTON 035891 STATE OF NEW YORK

REGISTRATION EXPIRES: 03/31/2027

CONTRACT: GENERAL

TITLE: RENOVATE INTERIOR SPACES

LOCATION: STATE ARMORY, 150-74 6TH AVE, WHITESTONE, NY.

CLIENT: NEW YORK STATE DIVISION OF MILITARY AND NAVAL AFFAIRS

MARK	DATE	DESCRIPTION
2	06/27/2025	ADDENDUM 02
	05/20/2025	BID DOCUMENTS

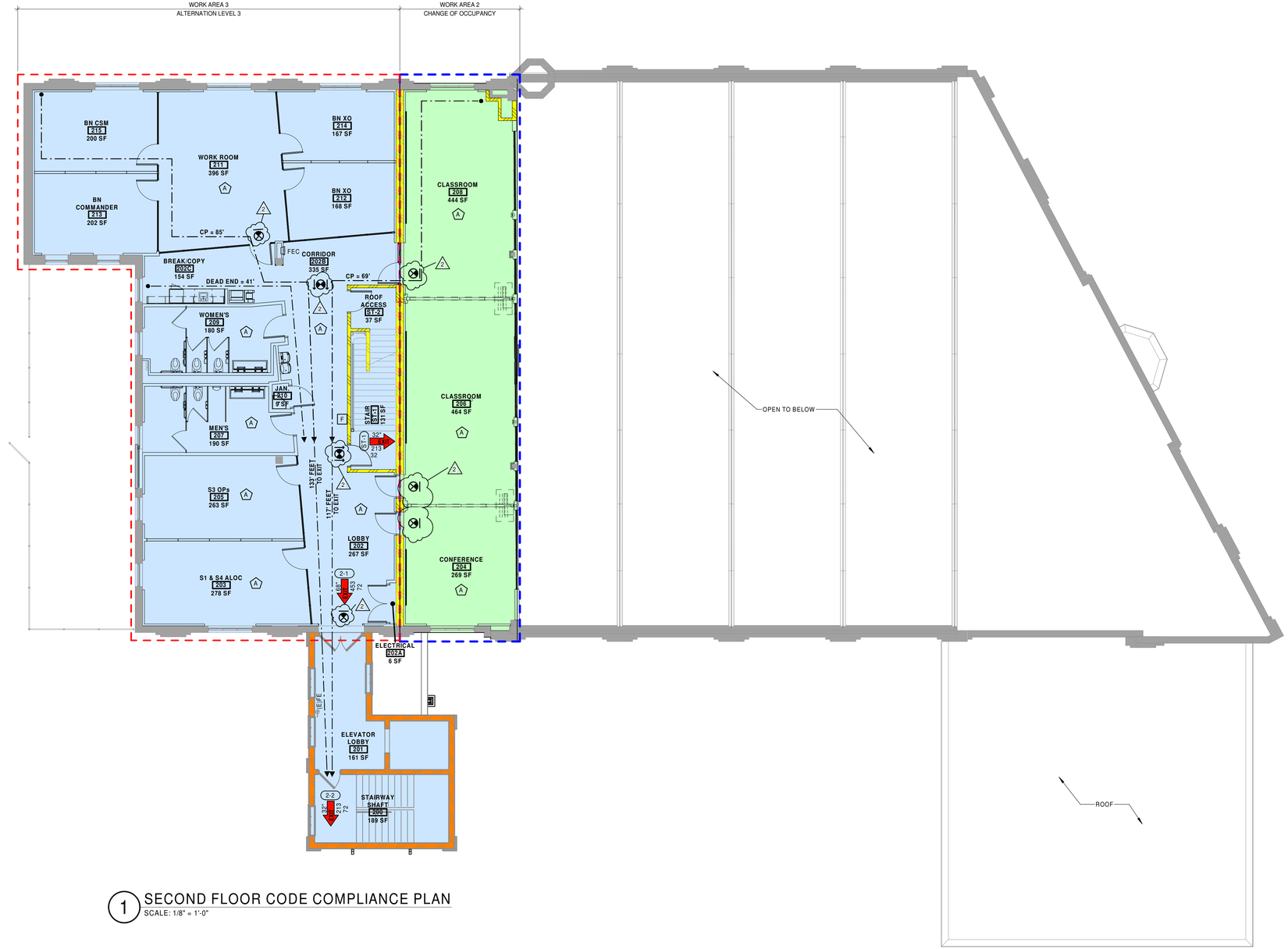
PROJECT NUMBER:	47592 – C, H, P, E
DESIGNED BY:	TCO
DRAWN BY:	WTF
FIELD CHECK:	
APPROVED:	

SHEET TITLE: FIRST FLOOR CODE COMPLIANCE PLAN

DRAWING NUMBER: G-101

SHEET 5 OF 94

24 x 36



1 SECOND FLOOR CODE COMPLIANCE PLAN
SCALE: 1/8" = 1'-0"

CODE COMPLIANCE LEGEND:

EXIT TAG

EXIT WIDTH
34" EXIT 38
EXIT CAPACITY PROVIDED
EXIT CAPACITY REQUIRED

TRAVEL DISTANCES:

CP = 12'
CP = COMMON PATH OF EGRESS TRAVEL DISTANCE
12' FEET TO EXIT
EGRESS TRAVEL DISTANCE

SYMBOLS:

- (E)FE = EXISTING FIRE EXTINGUISHER
- FE = FIRE EXTINGUISHER
- DFB = DEFIBRILLATOR
- FEC = FIRE EXTINGUISHER CABINET (RECESSED)

FIRE RATED ASSEMBLIES

- 1 HOUR FIRE BARRIER
- 1 HOUR FIRE PARTITION
- 2 HOUR FIRE BARRIER

OCCUPANCY AREAS:

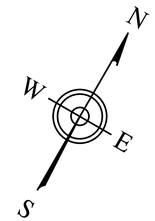
- ASSEMBLY AREA
- BUSINESS AREA

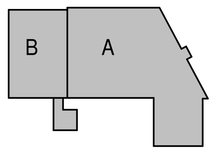
ELECTRICAL SYMBOLS:

- EXIT LIGHT - DOUBLE FACED
- EXIT LIGHT - SINGLE FACE
- S SMOKE DETECTOR
- A FIRE ALARM NOTIFICATION DEVICE
- F FIRE ALARM PULL STATION

CODE COMPLIANCE NOTES:

1. CONSTRUCTION (C), HVAC (H), PLUMBING (P), AND ELECTRICAL (E) CONTRACTORS SHALL COORDINATE WORK WITH ALL OTHER CONTRACTS.
2. PROVIDE THROUGH-PENETRATION AND MEMBRANE FIRESTOPPING SYSTEMS FOR ALL WORK PENETRATING VERTICAL AND HORIZONTAL FIRE-RATED AND SMOKE-RATED ASSEMBLIES, REGARDLESS OF WHETHER THE ASSEMBLY IS NEW OR EXISTING. PROVIDE FIRESTOPPING SYSTEMS AT OPENINGS (VOIDS) MADE BY REMOVALS WORK AT FIRE-RATED AND SMOKE-RATED ASSEMBLIES. PROVIDE JOINT FIRESTOPPING SYSTEMS AT ALL FIRE-RATED INTERSECTIONS AND JUNCTURES, BETWEEN FIRE-RATED ASSEMBLIES, AND BETWEEN FIRE-RATED TO NON-FIRE-RATED ASSEMBLIES. REFERENCE CODE COMPLIANCE DRAWINGS FOR FIRE-RATED AND SMOKE-RATED ASSEMBLIES AND THEIR LOCATIONS. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
3. FLOOR AND CEILING ASSEMBLIES BETWEEN BUSINESS (B) AND ASSEMBLY (A) OCCUPANCIES ARE 1-HOUR RATED; FIRESTOP PENETRATIONS THROUGH THOSE ASSEMBLIES ACCORDINGLY.
4. IDENTIFY ALL RATED WALL ASSEMBLIES, REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
5. MAINTAIN MEANS OF EGRESS AND REQUIRED ACCESSIBLE MEANS OF EGRESS AT ALL TIMES DURING REMOVALS AND CONSTRUCTION ACTIVITIES IN ACCORDANCE WITH THE CURRENT VERSION OF THE EXISTING BUILDING CODE OF NEW YORK STATE.





KEY PLAN

NEW YORK STATE | Office of General Services
DESIGN & CONSTRUCTION

CONSULTANT

CERTIFICATE OF AUTHORIZATION No.:

BCA ARCHITECTS ENGINEERS

BUILDING CODE COMPLIANCE:

COMPLIANCE STATEMENT:

TO THE BEST OF THE REGISTERED DESIGN PROFESSIONAL'S KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE DRAWINGS AND / OR SPECIFICATIONS ARE IN COMPLIANCE WITH THE 2020 UNIFORM CODE.

ENERGY CODE COMPLIANCE:

COMPLIANCE STATEMENT:

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WARNING:

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REGISTERED ARCHITECT
TRAVIS C OVERTON
035891
STATE OF NEW YORK

REGISTRATION EXPIRES: 03/31/2027

CONTRACT:
GENERAL

TITLE:
RENOVATE INTERIOR SPACES

LOCATION:
STATE ARMORY
150-74 6TH AVE,
WHITESTONE, NY.

CLIENT:
NEW YORK STATE DIVISION OF MILITARY AND NAVAL AFFAIRS

MARK	DATE	DESCRIPTION
2	06/27/2025	ADDENDUM 02
	05/20/2025	BID DOCUMENTS

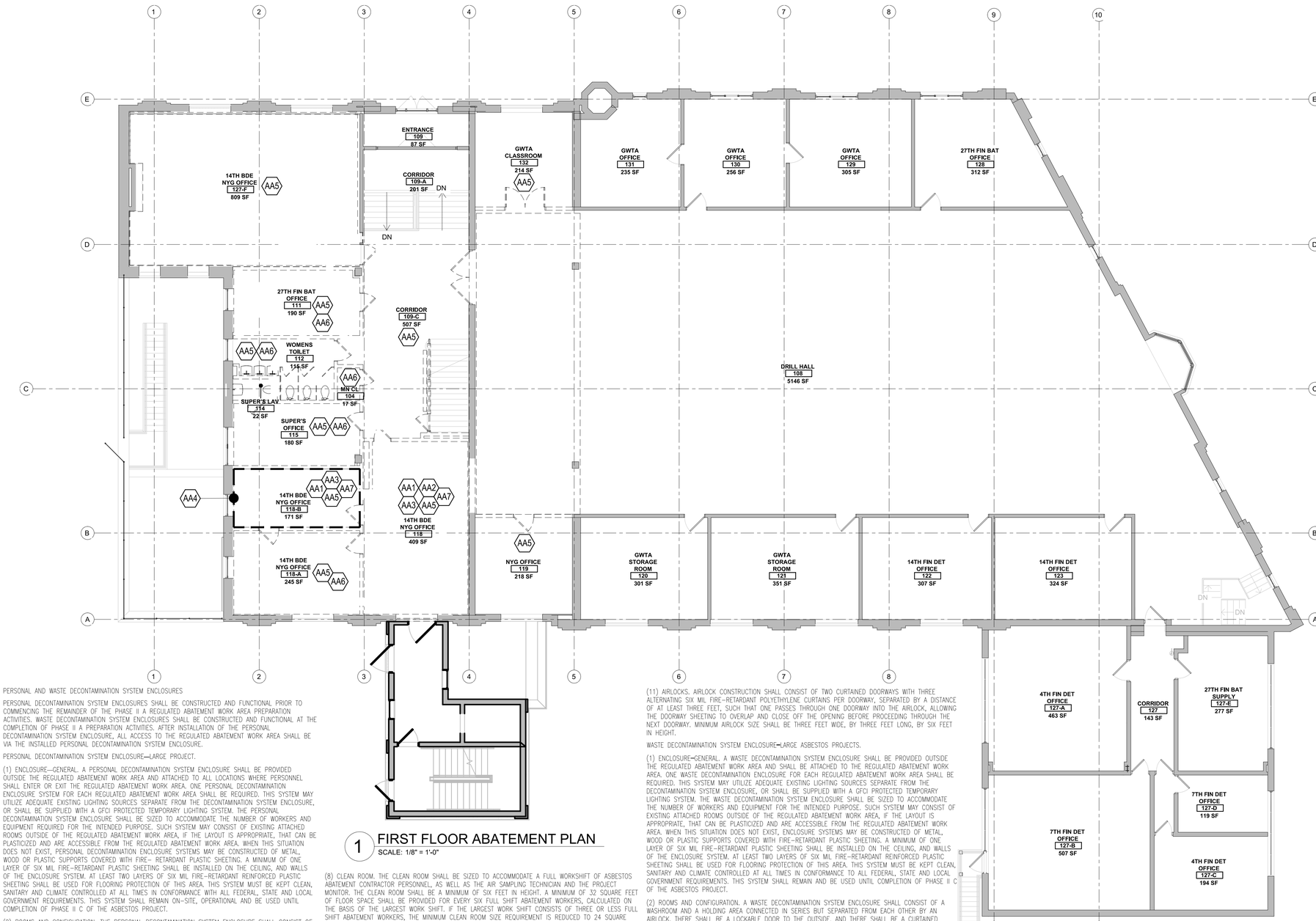
PROJECT NUMBER:	47592 – C, H, P, E
DESIGNED BY:	TCO
DRAWN BY:	WTF
FIELD CHECK:	
APPROVED:	

SHEET TITLE:
SECOND FLOOR CODE COMPLIANCE PLAN

DRAWING NUMBER:
G-102

SHEET 6 OF 94

24 x 36



1 FIRST FLOOR ABATEMENT PLAN

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

PERSONAL AND WASTE DECONTAMINATION SYSTEM ENCLOSURES

PERSONAL DECONTAMINATION SYSTEM ENCLOSURES SHALL BE CONSTRUCTED AND FUNCTIONAL PRIOR TO COMMENCING THE REMAINDER OF THE PHASE II A REGULATED ABATEMENT WORK AREA PREPARATION ACTIVITIES. WASTE DECONTAMINATION SYSTEM ENCLOSURES SHALL BE CONSTRUCTED AND FUNCTIONAL AT THE COMPLETION OF PHASE II A PREPARATION ACTIVITIES. AFTER INSTALLATION OF THE PERSONAL DECONTAMINATION SYSTEM ENCLOSURE, ALL ACCESS TO THE REGULATED ABATEMENT WORK AREA SHALL BE VIA THE INSTALLED PERSONAL DECONTAMINATION SYSTEM ENCLOSURE.

PERSONAL DECONTAMINATION SYSTEM ENCLOSURE–LARGE PROJECT.

(1) ENCLOSURE–GENERAL. A PERSONAL DECONTAMINATION SYSTEM ENCLOSURE SHALL BE PROVIDED OUTSIDE THE REGULATED ABATEMENT WORK AREA AND ATTACHED TO ALL LOCATIONS WHERE PERSONNEL SHALL ENTER OR EXIT THE REGULATED ABATEMENT WORK AREA. ONE PERSONAL DECONTAMINATION ENCLOSURE SYSTEM FOR EACH REGULATED ABATEMENT WORK AREA SHALL BE REQUIRED. THIS SYSTEM MAY UTILIZE ADEQUATE EXISTING LIGHTING SOURCES SEPARATE FROM THE DECONTAMINATION SYSTEM ENCLOSURE, OR SHALL BE SUPPLIED WITH A GFCI PROTECTED TEMPORARY LIGHTING SYSTEM. THE PERSONAL DECONTAMINATION SYSTEM ENCLOSURE SHALL BE SIZED TO ACCOMMODATE THE NUMBER OF WORKERS AND EQUIPMENT REQUIRED FOR THE INTENDED PURPOSE. SUCH SYSTEM MAY CONSIST OF EXISTING ATTACHED ROOMS OUTSIDE OF THE REGULATED ABATEMENT WORK AREA, IF THE LAYOUT IS APPROPRIATE, THAT CAN BE PLASTICIZED AND ARE ACCESSIBLE FROM THE REGULATED ABATEMENT WORK AREA. WHEN THIS SITUATION DOES NOT EXIST, PERSONAL DECONTAMINATION ENCLOSURE SYSTEMS MAY BE CONSTRUCTED OF METAL, WOOD OR PLASTIC SUPPORTS COVERED WITH FIRE- RETARDANT PLASTIC SHEETING. A MINIMUM OF ONE LAYER OF SIX MIL FIRE–RETARDANT PLASTIC SHEETING SHALL BE INSTALLED ON THE CEILING, AND WALLS OF THE ENCLOSURE SYSTEM. AT LEAST TWO LAYERS OF SIX MIL FIRE–RETARDANT REINFORCED PLASTIC SHEETING SHALL BE USED FOR FLOORING PROTECTION OF THIS AREA. THIS SYSTEM MUST BE KEPT CLEAN, SANITARY AND CLIMATE CONTROLLED AT ALL TIMES IN CONFORMANCE WITH ALL FEDERAL, STATE AND LOCAL GOVERNMENT REQUIREMENTS. THIS SYSTEM SHALL REMAIN ON–SITE, OPERATIONAL AND BE USED UNTIL COMPLETION OF PHASE II C OF THE ASBESTOS PROJECT.

(2) ROOMS AND CONFIGURATION. THE PERSONAL DECONTAMINATION SYSTEM ENCLOSURE SHALL CONSIST OF A CLEAN ROOM, A SHOWER ROOM AND AN EQUIPMENT ROOM CONNECTED IN SERIES BUT SEPARATED FROM EACH OTHER BY AIRLOCKS. THERE SHALL BE A CURTAINED DOORWAY SEPARATION BETWEEN THE EQUIPMENT ROOM AND THE REGULATED ABATEMENT WORK AREA, AND THERE SHALL BE A LOCKABLE DOOR TO THE OUTSIDE. MINIMUM DIMENSIONS FOR EACH AIRLOCK, SHOWER ROOM AND EQUIPMENT ROOM SHALL BE THREE FEET WIDE BY SIX FEET IN HEIGHT, TO ALLOW FOR ADEQUATE ACCESS TO AND FROM THE REGULATED ABATEMENT WORK AREA.

(3) CURTAINED DOORWAY. AN ASSEMBLY WHICH CONSISTS OF AT LEAST THREE OVERLAPPING SHEETS OF SIX MIL FIRE–RETARDANT PLASTIC OVER AN EXISTING OR TEMPORARILY FRAMED DOORWAY. ONE SHEET SHALL BE SECURED AT THE TOP AND LEFT SIDE, THE SECOND SHEET AT THE TOP AND RIGHT SIDE, AND THE THIRD SHEET AT THE TOP AND LEFT SIDE. ALL SHEETS SHALL HAVE WEIGHTS ATTACHED TO THE BOTTOM TO INSURE THAT THE SHEETS HANG STRAIGHT AND MAINTAIN A SEAL OVER THE DOORWAY WHEN NOT IN USE.

(4) FRAMING. ENCLOSURE SYSTEMS ACCESSIBLE TO THE PUBLIC SHALL BE FULLY FRAMED, HARD–WALL SHEATHED AND UTILIZE A LOCKABLE DOOR FOR SAFETY AND SECURITY.

(5) SHEATHING. A PLYWOOD OR ORIENTED STRAND BOARD (OSB) SHEATHING MATERIAL OF AT LEAST ¼ –INCH THICKNESS.

(6) PLASTIC SHEETING. ENCLOSURE SYSTEMS CONSTRUCTED AT THE WORK SITE SHALL USE AT LEAST ONE LAYER OF SIX MIL FIRE–RETARDANT PLASTIC SHEETING ON WALLS AND CEILING. AT LEAST TWO LAYERS OF SIX MIL FIRE–RETARDANT REINFORCED PLASTIC SHEETING SHALL BE USED FOR FLOOR PROTECTION OF THIS AREA.

(7) PREFABRICATED OR TRAILER UNITS. A COMPLETELY WATERTIGHT FIBERGLASS OR MARINE PAINTED PREFABRICATED UNIT DOES NOT REQUIRE PLASTICIZING. ROOMS SHALL BE CONFIGURED AS PER NYCRR PART 56–7.5. ALL PREFABRICATED OR TRAILER DECONTAMINATION UNITS SHALL BE KEPT IN GOOD CONDITION, AND SHALL BE COMPLETELY DECONTAMINATED AFTER FINAL CLEANING AND IMMEDIATELY PRIOR TO CLEARANCE AIR SAMPLING. UPON RECEIVING SATISFACTORY CLEARANCE AIR RESULTS, THE PREFABRICATED UNITS SHALL BE SEALED THEN SEPARATED FROM THE REGULATED ABATEMENT WORK AREA AND REMOVED FROM THE SITE.

(8) CLEAN ROOM. THE CLEAN ROOM SHALL BE SIZED TO ACCOMMODATE A FULL WORKSHIFT OF ASBESTOS ABATEMENT CONTRACTOR PERSONNEL, AS WELL AS THE AIR SAMPLING TECHNICIAN AND THE PROJECT MONITOR. THE CLEAN ROOM SHALL BE A MINIMUM OF SIX FEET IN HEIGHT. A MINIMUM OF 32 SQUARE FEET OF FLOOR SPACE SHALL BE PROVIDED FOR EVERY SIX FULL SHIFT ABATEMENT WORKERS, CALCULATED ON THE BASIS OF THE LARGEST WORK SHIFT. IF THE LARGEST WORK SHIFT CONSISTS OF THREE OR LESS FULL SHIFT ABATEMENT WORKERS, THE MINIMUM CLEAN ROOM SIZE REQUIREMENT IS REDUCED TO 24 SQUARE FEET OF FLOOR SPACE. BENCHES, LOCKERS AND HOOKS SHALL BE PROVIDED FOR STREET CLOTHES. SHELVES FOR STORING RESPIRATORS SHALL BE PROVIDED. CLEAN CLOTHING, REPLACEMENT FILTERS FOR RESPIRATORS, TOWELS AND OTHER NECESSARY ITEMS SHALL BE PROVIDED. THE CLEAN ROOM SHALL NOT BE USED FOR STORAGE OF TOOLS, EQUIPMENT OR MATERIALS. IT SHALL NOT BE USED FOR OFFICE SPACE. A LOCKABLE DOOR SHALL BE PROVIDED TO PERMIT ACCESS TO THE CLEAN ROOM FROM OUTSIDE THE REGULATED ABATEMENT WORK AREA OR ENCLOSURE AND SHALL BE USED TO SECURE THE REGULATED ABATEMENT WORK AREA AND DECONTAMINATION ENCLOSURE DURING NON–WORK HOURS.

(9) SHOWER ROOM. THE SHOWER ROOM SHALL CONTAIN ONE SHOWER PER EVERY SIX FULL SHIFT ABATEMENT WORKERS, CALCULATED ON THE BASIS OF THE LARGEST WORK SHIFT. MULTIPLE SHOWERS SHALL BE SIMULTANEOUSLY ACCESSIBLE (INSTALLED IN PARALLEL) TO CERTIFIED PERSONNEL. EACH SHOWERHEAD SHALL BE SUPPLIED WITH HOT AND COLD WATER ADJUSTABLE AT THE TAP. THE SHOWER ENCLOSURE SHALL BE CONSTRUCTED TO ENSURE AGAINST LEAKAGE OF ANY KIND. UNCONTAMINATED SOAP, SHAMPOO AND TOWELS SHALL BE AVAILABLE AT ALL TIMES. SHOWER WATER SHALL BE DRAINED, COLLECTED AND FILTERED THROUGH A SYSTEM WITH AT LEAST 5.0–MICRON PARTICLE SIZE COLLECTION CAPABILITY. SUBMERSIBLE PUMPS SHALL BE INSTALLED, MAINTAINED AND UTILIZED IN ACCORDANCE WITH PERTINENT OSHA REGULATIONS AND MANUFACTURER'S RECOMMENDATIONS. A MULTI–STAGE FILTERING SYSTEM CONTAINING A SERIES OF SEVERAL FILTERS WITH PROGRESSIVELY SMALLER PORE SIZES SHALL BE USED TO AVOID RAPID CLOGGING OF THE FILTERING SYSTEM BY LARGER PARTICLES. FILTERED WASTEWATER SHALL BE DISCHARGED IN ACCORDANCE WITH APPLICABLE CODES. CONTAMINATED FILTERS SHALL BE DISPOSED OF AS ASBESTOS–CONTAMINATED WASTE.

(10) EQUIPMENT ROOM. THE EQUIPMENT ROOM SHALL BE USED FOR THE STORAGE OF DECONTAMINATED EQUIPMENT AND TOOLS. A ONE–DAY SUPPLY OF REPLACEMENT FILTERS FOR HEPA–VACUUMS AND NEGATIVE PRESSURE VENTILATION EQUIPMENT IN SEALED CONTAINERS, EXTRA TOOLS, CONTAINERS OF SURFACTANT AND OTHER MATERIALS AND EQUIPMENT THAT MAY BE REQUIRED DURING THE ABATEMENT PROJECT MAY ALSO BE STORED HERE. A CONTAINER LINED WITH A LABELED, AT LEAST SIX MIL PLASTIC BAG FOR COLLECTION OF CLOTHING SHALL BE LOCATED IN THIS ROOM. CONTAMINATED FOOTWEAR AND WORK CLOTHES SHALL BE STORED IN THIS AREA.

(11) AIRLOCKS. AIRLOCK CONSTRUCTION SHALL CONSIST OF TWO CURTAINED DOORWAYS WITH THREE ALTERNATING SIX MIL FIRE–RETARDANT POLYETHYLENE CURTAINS PER DOORWAY, SEPARATED BY A DISTANCE OF AT LEAST THREE FEET, SUCH THAT ONE PASSES THROUGH ONE DOORWAY INTO THE AIRLOCK, ALLOWING THE DOORWAY SHEETING TO OVERLAP AND CLOSE OFF THE OPENING BEFORE PROCEEDING THROUGH THE NEXT DOORWAY. MINIMUM AIRLOCK SIZE SHALL BE THREE FEET WIDE, BY THREE FEET LONG, BY SIX FEET IN HEIGHT.

WASTE DECONTAMINATION SYSTEM ENCLOSURE–LARGE ASBESTOS PROJECTS.

(1) ENCLOSURE–GENERAL. A WASTE DECONTAMINATION SYSTEM ENCLOSURE SHALL BE PROVIDED OUTSIDE THE REGULATED ABATEMENT WORK AREA AND SHALL BE ATTACHED TO THE REGULATED ABATEMENT WORK AREA. ONE WASTE DECONTAMINATION ENCLOSURE FOR EACH REGULATED ABATEMENT WORK AREA SHALL BE REQUIRED. THIS SYSTEM MAY UTILIZE ADEQUATE EXISTING LIGHTING SOURCES SEPARATE FROM THE DECONTAMINATION SYSTEM ENCLOSURE, OR SHALL BE SUPPLIED WITH A GFCI PROTECTED TEMPORARY LIGHTING SYSTEM. THE WASTE DECONTAMINATION SYSTEM ENCLOSURE SHALL BE SIZED TO ACCOMMODATE THE NUMBER OF WORKERS AND EQUIPMENT FOR THE INTENDED PURPOSE. SUCH SYSTEM MAY CONSIST OF EXISTING ATTACHED ROOMS OUTSIDE OF THE REGULATED ABATEMENT WORK AREA, IF THE LAYOUT IS APPROPRIATE, THAT CAN BE PLASTICIZED AND ARE ACCESSIBLE FROM THE REGULATED ABATEMENT WORK AREA. WHEN THIS SITUATION DOES NOT EXIST, ENCLOSURE SYSTEMS MAY BE CONSTRUCTED OF METAL, WOOD OR PLASTIC SUPPORTS COVERED WITH FIRE–RETARDANT PLASTIC SHEETING. A MINIMUM OF ONE LAYER OF SIX MIL FIRE–RETARDANT PLASTIC SHEETING SHALL BE INSTALLED ON THE CEILING, AND WALLS OF THE ENCLOSURE SYSTEM. AT LEAST TWO LAYERS OF SIX MIL FIRE–RETARDANT REINFORCED PLASTIC SHEETING SHALL BE USED FOR FLOORING PROTECTION OF THIS AREA. THIS SYSTEM MUST BE KEPT CLEAN, SANITARY AND CLIMATE CONTROLLED AT ALL TIMES IN CONFORMANCE TO ALL FEDERAL, STATE AND LOCAL GOVERNMENT REQUIREMENTS. THIS SYSTEM SHALL REMAIN AND BE USED UNTIL COMPLETION OF PHASE II C OF THE ASBESTOS PROJECT.

(2) ROOMS AND CONFIGURATION. A WASTE DECONTAMINATION SYSTEM ENCLOSURE SHALL CONSIST OF A WASHROOM AND A HOLDING AREA CONNECTED IN SERIES BUT SEPARATED FROM EACH OTHER BY AN AIRLOCK. THERE SHALL BE A LOCKABLE DOOR TO THE OUTSIDE, AND THERE SHALL BE A CURTAINED DOORWAY BETWEEN THE WASHROOM AND THE REGULATED ABATEMENT WORK AREA.

(3) CURTAINED DOORWAY. AN ASSEMBLY WHICH CONSISTS OF AT LEAST THREE OVERLAPPING SHEETS OF SIX MIL FIRE–RETARDANT PLASTIC OVER AN EXISTING OR TEMPORARILY FRAMED DOORWAY. ONE SHEET SHALL BE SECURED AT THE TOP AND LEFT SIDE, THE SECOND SHEET AT THE TOP AND RIGHT SIDE, AND THE THIRD SHEET AT THE TOP AND LEFT SIDE. ALL SHEETS SHALL HAVE WEIGHTS ATTACHED TO THE BOTTOM TO INSURE THAT THE SHEETS HANG STRAIGHT AND MAINTAIN A SEAL OVER THE DOORWAY WHEN NOT IN USE.

(4) WASHROOM. A ROOM/CHAMBER BETWEEN THE REGULATED ABATEMENT WORK AREA AND THE HOLDING AREA IN THE WASTE DECONTAMINATION SYSTEM ENCLOSURE, WHERE EQUIPMENT AND WASTE CONTAINERS ARE WET CLEANED OR HEPA–VACUUMED. ADEQUATE DRAINAGE AND BAG/CONTAINER WASH WATER SHALL BE PROVIDED WITHIN THE ROOM/CHAMBER, AS WELL AS A SUFFICIENT QUANTITY OF CLEAN WASTE BAGS/CONTAINERS.

(5) EQUIPMENT/WASHROOM ALTERNATIVE. WHERE THERE IS ONLY ONE EXIT FROM THE REGULATED ABATEMENT WORK AREA, THE HOLDING AREA OF THE WASTE DECONTAMINATION SYSTEM ENCLOSURE MAY BRANCH OFF FROM THE EQUIPMENT ROOM OF THE PERSONAL DECONTAMINATION SYSTEM ENCLOSURE. THE EQUIPMENT ROOM WILL ALSO BE USED AS A WASTE WASHROOM.

(6) PLASTIC SHEETING. WASTE DECONTAMINATION SYSTEM ENCLOSURES CONSTRUCTED AT THE WORK SITE SHALL USE AT LEAST ONE LAYER OF SIX MIL FIRE–RETARDANT PLASTIC SHEETING ON WALLS AND CEILING. AT LEAST TWO LAYERS OF SIX MIL FIRE–RETARDANT REINFORCED PLASTIC SHEETING SHALL BE USED FOR FLOORING PROTECTION OF THESE AREAS.

(7) ENCLOSURE SECURITY. THE WASTE DECONTAMINATION SYSTEM ENCLOSURE AND REGULATED ABATEMENT WORK AREA AIRLOCK(S) (WHEN REMOTE DECONTAMINATION SYSTEMS ARE USED) SHALL BE CONSTRUCTED WITH LOCKABLE DOORS TO PREVENT UNAUTHORIZED ENTRY. ENCLOSURE SYSTEMS LOCATED WITHIN 25 FEET OF AN AREA OF PUBLIC ACCESS SHALL BE FULLY FRAMED AND HARD–WALL SHEATHED FOR SAFETY.

(8) DRAINS. THE WASTE WASHROOM SHALL BE EQUIPPED WITH A WASH BIN OF SUFFICIENT SIZE TO PERFORM WASTE CONTAINER WASHING OPERATIONS AND SHALL HAVE A SUBMERSIBLE PUMP INSTALLED TO COLLECT WASTE WATER AND DELIVER IT TO THE SHOWER WASTEWATER FILTRATION SYSTEM WHERE IT SHALL BE FILTERED IN ACCORDANCE WITH PARAGRAPH (B)(9) OF NYCRR PART 56–7.5.

(9) SHOWER/WASHROOM ALTERNATIVE – SMALL ASBESTOS PROJECT. FOR SMALL ASBESTOS PROJECTS WITH ONLY ONE EXIT FROM THE REGULATED ABATEMENT WORK AREA, THE SHOWER ROOM MAY BE USED AS A WASTE WASHROOM. THE CLEAN ROOM SHALL NOT BE USED FOR WASTE STORAGE, BUT SHALL BE USED FOR WASTE TRANSFER TO CARTS, WHICH SHALL BE IMMEDIATELY REMOVED FROM THE ENCLOSURE. WASTE SHALL BE TRANSFERRED ONLY DURING TIMES WHEN THE SHOWERS ARE NOT IN USE.

WASTE DECONTAMINATION SYSTEM ENCLOSURE – WHEN REMOTE PERSONAL IS ALLOWED.

WHEN A REMOTE PERSONAL DECONTAMINATION SYSTEM ENCLOSURE IS ALLOWED AND UTILIZED FOR A REGULATED ABATEMENT WORK AREA, THE FOLLOWING REQUIREMENTS SHALL APPLY:

(1) MINOR SIZE REGULATED ABATEMENT WORK AREA. NO SPECIFIC WASTE DECONTAMINATION SYSTEM ENCLOSURE IS REQUIRED FOR MINOR SIZE REGULATED ABATEMENT WORK AREAS. THE WASTE GENERATED SHALL BE IMMEDIATELY BAGGED/CONTAINERIZED WITHIN THE REGULATED ABATEMENT WORK AREA.

(2) SMALL AND LARGE SIZE REGULATED ABATEMENT WORK AREAS.

(I) WASHROOM. AN ADDITIONAL CHAMBER SHALL BE CONSTRUCTED WITHIN THE REGULATED ABATEMENT WORK AREA, ATTACHED TO THE EXISTING AIRLOCK USED TO ACCESS THE WORK AREA. THE WASHROOM/AIRLOCK COMBINATION SHALL BE UTILIZED AS THE CONTIGUOUS WASTE DECONTAMINATION ENCLOSURE FOR WASTE BAGGING/CONTAINERIZATION AND WASTE TRANSFER ACTIVITIES. THE WASHROOM SHALL BE CONSTRUCTED AND SUPPLIED WITH EQUIPMENT/MATERIALS CONSISTENT WITH WASTE DECONTAMINATION SYSTEM ENCLOSURE WASHROOM REQUIREMENTS FOR CONTIGUOUS PERSONAL AND WASTE DECONTAMINATION SYSTEM ENCLOSURES.

(II) REMOVAL. THE WASHROOM CHAMBER SHALL BE REMOVED ONLY AFTER SATISFACTORY CLEARANCE AIR SAMPLING RESULTS HAVE BEEN ACHIEVED.

GENERAL ABATEMENT NOTES:

1. ALL ASBESTOS ABATEMENT WORK SHALL BE PERFORMED IN ACCORDANCE WITH SPECIFICATION SECTION 028213.
2. WORK ON ALL SURFACES THAT CONTAIN LEAD BASED PAINT SHALL BE PERFORMED IN ACCORDANCE WITH SPECIFICATION SECTION 028304.
3. THIS FACILITY WILL BE OCCUPIED DURING CONSTRUCTION WORK.
4. SHUT DOWN AND ISOLATE EXISTING MECHANICAL EQUIPMENT SYSTEMS TO PREVENT CONTAMINATION AND DISPERSAL TO OTHER AREAS IN THE BUILDING. COORDINATE WITH THE DIRECTOR'S REPRESENTATIVE.
5. ANY CRITICAL ELECTRICAL RUNS THROUGH THE WORK AREA SHALL REMAIN ACTIVE DURING THE ENTIRE ABATEMENT PROCESS. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY REQUIRED VARIANCES REQUIRED TO MAINTAIN CRITICAL ELECTRICAL RUNS.
6. ALL SCHEDULED ABATEMENT WORK SHALL BE COORDINATED WITH THE DIRECTOR'S REPRESENTATIVE. FOLLOW ALL RULES AND REGULATIONS OF NYS ICR 56, EPA, OSHA AND OTHER APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS DURING THE ENTIRE PROJECT.
7. ATTEND THE PRE-WORK CONFERENCE AND PROVIDE A DETAILED ABATEMENT WORK PLAN FOR REVIEW.
8. BE RESPONSIBLE FOR ON-SITE SAFETY AND SECURITY OF EMPLOYEES DURING ALL HAZARDOUS REMOVAL ACTIVITIES. ASSUME RESPONSIBILITY FOR PROCEEDING WITH THE WORK IN A MANNER THAT OFFERS EMPLOYEES A WORKPLACE FREE FROM RECOGNIZED HAZARDS CAUSING SERIOUS HEALTH, HARM OR INJURY.
9. PROVIDE TO THE DIRECTOR'S REPRESENTATIVE ALL WASTE TRANSPORTER PERMITS, WASTE DISPOSAL RECEIPTS AND THE CONTRACTORS POST ABATEMENT REPORT. SEE THE CLOSEOUT SUBMITTAL SECTION IN EACH OF THE ABATEMENT SPEC SECTIONS FOR DETAILS.
10. VERIFY THAT LANDFILL ACCEPTS ALL TYPES OF HAZARDOUS MATERIALS WITHIN PROJECTS SCOPE OF WORK.
11. ANY REMOVAL WORK OR ANY OTHER WORK IN THESE AREAS SHALL COMMENCE ONLY AFTER THE HAZARDOUS MATERIAL REMOVAL WORK IS COMPLETED AND ONLY AFTER THE NECESSARY CLEARANCES ARE OBTAINED.
12. UPON COMPLETION OF HAZARDOUS MATERIAL REMOVALS WORK, ANY EXISTING AREAS AND/OR FINISHES THAT HAVE BEEN DAMAGED THAT ARE NOT PART OF THE REMOVAL SCOPES OF WORK (INCLUDES AREAS AND/OR FINISHES AS A RESULT OF ANY TEMPORARY PARTITIONS AND WASTE DECON UNIT ENCLOSURES CONSTRUCTION) SHALL BE RESTORED TO ORIGINAL CONDITIONS AT NO COST TO THE OWNER. FINISH RESTORATION SHALL BE APPROVED BY THE DIRECTOR'S REPRESENTATIVE.
13. COORDINATE ABATEMENT WITH SCOPE INDICATED ON OTHER DRAWINGS AND PERFORMED BY OTHER TRADE CONTRACTS.
14. THE RESULTS OF THE TESTING FOR ACM, LEAD & PCB'S ARE LISTED IN THE BUILDING ASBESTOS SURVEY REPORT BOUND IN THE APPENDIX OF THE SPECIFICATIONS. REFER TO SPEC. SECTION 003126.

ASBESTOS ABATEMENT KEYNOTE LEGEND

		TOTAL QTY. OF ACM
AA1	REMOVE AND DISPOSE OF FLOOR TILE	2,000 SQ. FT.
AA2	REMOVE AND DISPOSE OF 2-LAYERS OF FLOOR TILE	1,750 SQ. FT.
AA3	REMOVE AND DISPOSE OF THERMAL SYSTEMS INSULATION ON PIPES & FITTINGS.	16 FITTINGS & 55 LIN. FT. PIPE INSULATION
AA4	REMOVE AND DISPOSE OF PLASTER WALL AND ASSOCIATED FRAMING SYSTEMS, ALL AS ASBESTOS CONTAINING MATERIAL.	180 LIN. FT. OF WALL/ 2,400 SQ. FT. OF PLASTER SURFACE
AA5	REMOVE AND DISPOSE OF ELECTRICAL WIRING (BRANCH CIRCUITRY FOR DEVICES, SWITCHES, LIGHT FIXTURE WIRING, ELECTRICAL PANELS AND THE LIKE) TO ITS SOURCE AFTER DISCONNECTION OF POWER BY ELECTRICAL TRADE CONTRACTOR	1,500 LIN. FT. OF MULTI-CONDUCTOR WIRING
AA6	REMOVE AND DISPOSE OF PLASTER WALL (ONE SIDE), CEILINGS & CONCEALED THERMAL SYSTEMS INSULATION ON PIPES & FITTINGS.	78 FITTINGS, 200 LIN FT. PIPE INSULATION, 850 SQ. PLASTER CLG. & 4,200 SQ. FT. PLASTER WALL
AA7	REMOVE AND DISPOSE OF ACT CEILINGS TO ACCESS PIPE INSULATION	600 SQ. FT.
AA8	REMOVE AND DISPOSE OF ROOFING, FLASHING AND ASSOCIATED TARS TO TOP OF STRUCTURAL DECK AND FROM MECHANICAL EQUIPMENT / PENETRATIONS / CURBS.	20 SQ. FT. EACH LOCATION / 40 SQ. FT. TOTAL

NEW YORK STATE | Office of General Services

CONSULTANT

CERTIFICATE OF AUTHORIZATION No.:

Adelaide ENVIRONMENTAL HEALTH

BUILDING CODE COMPLIANCE:

COMPLIANCE STATEMENT:

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ENERGY CODE COMPLIANCE:

COMPLIANCE STATEMENT:

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REGISTERED ARCHITECT PAUL RICHARD CORSO 027811 STATE OF NEW YORK

REGISTRATION EXPIRES: 08/31/2026

CONTRACT:

CONSTRUCTION

TITLE:

RENOVATE INTERIOR SPACES
WHITESTONE ARMORY

LOCATION:

STATE ARMORY
150-74 6TH AVE, WHITESTONE, NY.

CLIENT:

NYS DIVISION OF MILITARY AND NAVAL AFFAIRS

MARK	DATE	DESCRIPTION
2	05/27/2025	ADDENDUM 02
	05/20/2025	BID DOCUMENTS

PROJECT NUMBER:	47592 – C
DESIGNED BY:	AEHA
DRAWN BY:	PCS
FIELD CHECK:	
APPROVED:	JPF

SHEET TITLE:

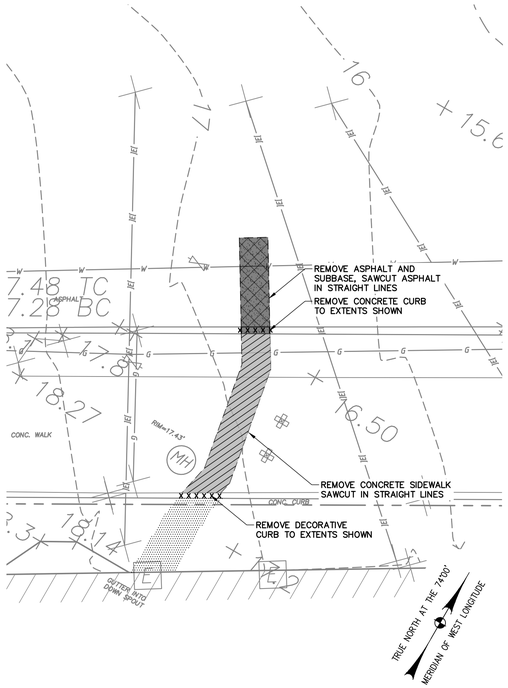
FIRST FLOOR ABATEMENT PLAN

DRAWING NUMBER :

H-100

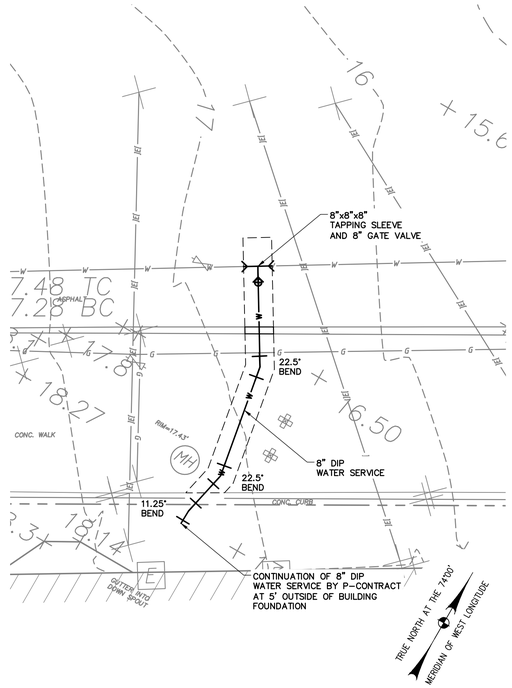
SHEET 07 OF 93

24 X 36



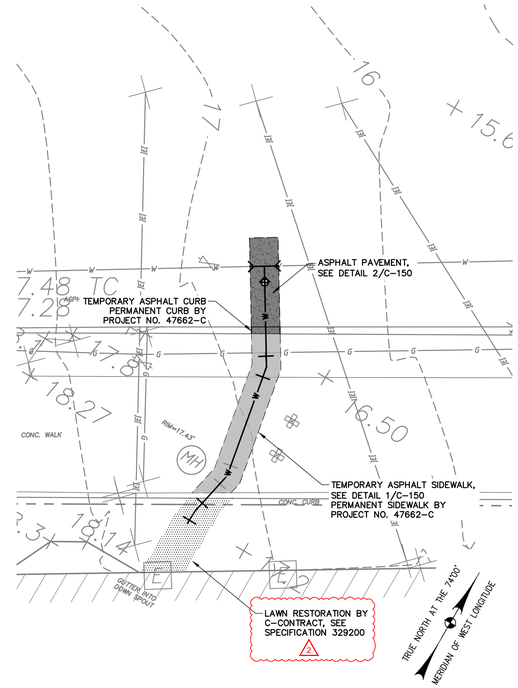
1 REMOVALS PLAN

SCALE: 1" = 5'



2 UTILITY PLAN

SCALE: 1" = 5'



3 RESTORATION PLAN

SCALE: 1" = 5'

EXISTING LEGEND

- ELECTRICAL JUNCTION BOX
- UNKNOWN MANHOLE
- UNIDENTIFIED VALVE
- BUILDING LINE
- OVERHEAD ELECTRIC
- WATER LINE
- GAS LINE

PROPOSED LEGEND

- 8" DIP WATER SERVICE
- 8"x8"x8" TAPPING SLEEVE
- 8" 22.5° WATER BEND
- 8" 11.25° WATER BEND
- 8" GATE VALVE
- CONCRETE REMOVAL
- ASPHALT REMOVAL
- TEMPORARY ASPHALT PAVEMENT
- ASPHALT PAVEMENT
- LAWN RESTORATION

UDIG NY: CALL 1-800-272-4480 BEFORE YOU DIG:

1. CALL BEFORE YOU DIG: IF YOU PLAN TO DIG OR DO ANY TYPE OF EXCAVATION WORK, NEW YORK STATE LAW REQUIRES YOU CALL UDIG NY PRIOR TO DOING SO.
2. WAIT THE REQUIRED TIME: YOU NEED TO PROVIDE TWO FULL WORKING DAYS NOTICE PRIOR TO STARTING YOUR WORK, NOT COUNTING THE DAY OF YOUR CALL, WEEKENDS OR HOLIDAYS. THIS PROVIDES TIME FOR THE UTILITIES TO LOCATE YOUR PROPOSED DIG SITE.
3. CONFIRM UTILITY RESPONSE: UDIG NY WILL NOTIFY ALL MEMBER UTILITIES OF THE PENDING EXCAVATION SO THAT THAT THEY CAN COME OUT AND MARK THE LOCATION OF THEIR UNDERGROUND LINES. BEFORE DIGGING ON YOUR STATED COMMENCEMENT DATE CONFIRM THAT ALL UTILITIES HAVE RESPONDED TO YOU INDICATING THEY HAVE MARKED YOUR PROPERTY OR THEY HAVE NO FACILITIES PRESENT.
4. RESPECT THE MARKS: BEFORE YOU BEGIN YOUR EXCAVATION, WALK THROUGH THE SITE TO FAMILIARIZE YOURSELF WITH THE MARKINGS AND THE LOCATIONS OF BURIED FACILITIES.
5. DIG WITH CARE: IT IS IMPORTANT EXCAVATORS TAKE A PROACTIVE APPROACH TO SAFETY NOT ONLY FOR THEMSELVES BUT FOR THE PUBLIC BY INITIATING THE ONE CALL PROCESS AND ADHERING TO THE FIVE STEPS OF A SAFE EXCAVATION.

GENERAL NOTES:

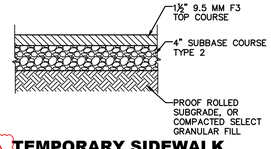
1. THE CONTRACTOR TO OBTAIN WORK PERMIT FROM THE NYCDOT AND NYCDEP.

MPT NOTES:

1. INTERMEDIATE-TERM – STATIONARY WORK THAT OCCUPIES A LOCATION MORE THAN ONE DAYLIGHT PERIOD UP TO 3 CONSECUTIVE DAYS, OR NIGHTTIME WORK LASTING MORE THAN 1 HOURS. REFER TO NYSDOT STANDARD SHEET 619-201.
2. ALL FLAGGERS TO USE 24" (MIN.) OCTAGON SHAPED STOP/SLOW PADDLES HAVING 6' STAFF. THE PADDLE IS THE PREFERRED DEVICE, BUT THE FLAG MAY BE USED AT INTERSECTIONS WHERE THE STOP/SLOW PADDLE WOULD OFFER CONTRADICTING INFORMATION TO DRIVERS TRAVELING IN OPPOSITE DIRECTIONS/LEGS OF THE INTERSECTION OR DURING INCIDENT MANAGEMENT SITUATIONS.
3. CENTERLINE CONES MAY BE ADDED TO ENHANCE THE VISIBILITY OF THE FLAGGER STATION. IF CONES ARE USED, PLACE THEM 100 FT. (MINIMUM) FROM FLAGGER.
1. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION AND MAINTENANCE OF THE WORK ZONE TRAFFIC CONTROL (WZTC) FOR THE DURATION OF THE CONTRACT. COORDINATE WITH NYCDOT FOR ALL PARKING RESTRICTIONS AND TRAFFIC ALTERATIONS. WZTC SHALL BE PROVIDED IN ACCORDANCE WITH THE FOLLOWING DOCUMENTS:
   A. THE TRAFFIC CONTROL PLAN AND REQUIREMENTS SET FORTH IN THE PLANS OF THIS CONTRACT.
   B. THE MOST CURRENT EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
2. PROVIDE A TENTATIVE SCHEDULE OF OPERATIONS TO NYCDOT AND EMERGENCY SERVICE PROVIDERS TWO WEEKS BEFORE BEGINNING CONSTRUCTION ACTIVITIES. DURING CONSTRUCTION, THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE NOTIFICATION TO NYCDOT, LOCAL AUTHORITIES, AND EMERGENCY SERVICE PROVIDERS OF CHANGES TO THE PREVIOUS WORK PLAN/WORK LOCATIONS. MAKE PROVISIONS AT THE PRE-CONSTRUCTION MEETING OR OTHER MEETING PRIOR TO THE START OF WORK BETWEEN THE CONTRACTOR, LOCAL AUTHORITIES AND EMERGENCY SERVICE PROVIDERS TO ADDRESS A SITUATION WHEN EMERGENCY ACCESS IS NEEDED THROUGH A CONSTRUCTION OPERATION OF CONTRACT LIMITS.

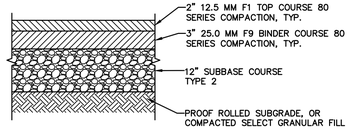
WATER CONNECTION NOTE:

1. CONTRACTOR RESPONSIBLE FOR OBTAINING WATER TAPPING PERMIT AND COMPLYING WITH ALL REQUIREMENTS FROM NYCDEP PRIOR TO COMMENCING WORK.



4 TEMPORARY SIDEWALK ASPHALT PAVEMENT SECTION

SCALE: N.T.S.

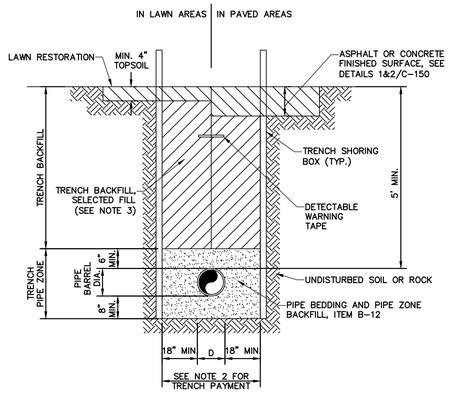


NOTES:

1. TACK COAT WHEN SPECIFIED OR CALLED OUT IN THESE DRAWINGS OR WHEN PAVEMENT COURSES ARE NOT INSTALLED IMMEDIATELY AFTER ONE ANOTHER.
2. REFER TO SPECIFICATION SECTION 321216 FOR PAVEMENT MATERIAL REQUIREMENTS.

5 ASPHALT PAVEMENT SECTION

SCALE: N.T.S.

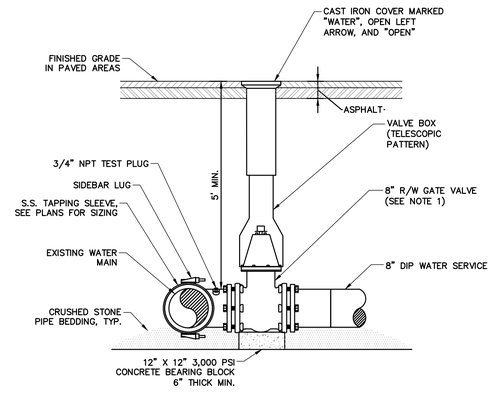


NOTES:

1. D=OUTSIDE PIPE DIAMETER.
2. ON-SITE EXCAVATED TRENCH MATERIAL MAY BE USED FOR TRENCH BACKFILL IF REQUIREMENTS OF SELECTED FILL MATERIAL ARE MET AND FOR WHICH PAVEMENT, ROOTS, DEBRIS, AND STONES GREATER THAN 3" HAVE BEEN REMOVED. PLACE TRENCH BACKFILL IN MAXIMUM 8" LIFTS AND COMPACT TO 95% STANDARD PROCTOR DENSITY.
3. SHEET AND BRACE TRENCH PER O.S.H.A. STANDARDS WHEN INSUFFICIENT SPACE IS AVAILABLE TO SIDE SLOPE TRENCH. UNLESS OTHERWISE APPROVED, SHEETING AND BRACING MUST BE REMOVED AS BACKFILL PROGRESSES.
4. REFER TO SPECIFICATION SECTION 310001 FOR TRENCH BACKFILL, PIPE BEDDING AND PIPE ZONE BACKFILL FOR ADDITIONAL GRADATION AND COMPACTION REQUIREMENTS.

6 PIPE TRENCH AND BEDDING (TYPICAL)

SCALE: NTS



NOTES:

1. PROVIDE TAPPING SLEEVE, GATE VALVE, AND VALVE BOX WITH MAKE AND MODEL IN ACCORDANCE WITH PROJECT SPECIFICATIONS. SEE SECTION SECTION 331216.
2. SET TOPS OF VALVE BOXES FLUSH WITH GRADE IN PAVED AREAS AND 1" ABOVE GRADE IN GRASSED AREAS.
3. SET WATER VALVE OPENING DIRECTION PER CLIENT PREFERENCE. PROVIDE A 2" OPERATING NUT AND STAINLESS STEEL HARDWARE.
4. PERFORM WET TAP OF WATER MAIN UNDER THE SUPERVISION OF THE ENGINEER, AND THE FACILITY HAVING JURISDICTION.
5. SELECT TAPPING SLEEVE TO FIT EXISTING PIPE MATERIAL AND OUTSIDE DIAMETER.
6. THRUST BLOCKING IS REQUIRED WHERE THE BRANCH OF THE TAPPING SLEEVE DOES NOT HAVE RESTRAINED JOINTS.
7. PROVIDE 3' MINIMUM DISTANCE TO JOINTS, FITTINGS, OR OTHER WET TAPS OR STOPS.
8. REFER TO SPECIFICATIONS SECTION 310000 FOR BEDDING MATERIALS.

7 TAPPING SLEEVE AND VALVE

SCALE: NTS

Office of General Services
DESIGN & CONSTRUCTION

CONSULTANT

CERTIFICATE OF AUTHORIZATION #0017980

BCA ARCHITECT ENGINEER

MJ Engineering Architecture Landscape Architecture and Land Surveying, P.C.

ENERGY CODE STATEMENT:

TO THE BEST OF THE REGISTERED DESIGN PROFESSIONAL'S KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE PLANS AND/OR SPECIFICATIONS ARE IN COMPLIANCE WITH THE 2020 ENERGY CODE.

UNIFORM CODE STATEMENT:

TO THE BEST OF THE REGISTERED DESIGN PROFESSIONAL'S KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE PLANS AND/OR SPECIFICATIONS ARE IN COMPLIANCE WITH THE 2020 UNIFORM CODE.

REGISTRATION EXPIRES 10.31.2026

CONTRACT:

CONSTRUCTION

TITLE:

RENOVATE INTERIOR SPACES

LOCATION:

STATE ARMORY
150-74 6TH AVENUE
WHITESTONE, NY

CLIENT:

DEPARTMENT OF MILITARY AND NAVAL AFFAIRS

MARK	DATE	DESCRIPTION
2	06/27/2025	ADDENDUM NO. 2
1	05/20/2025	BID DOCUMENTS

PROJECT NUMBER:	47592 - C
DESIGNED BY:	TAS
DRAWN BY:	TAS
FIELD CHECK:	JML
APPROVED:	JML

SHEET TITLE:

WATER SERVICE PLAN AND DETAILS

DRAWING NUMBER:

C-150

SHEET 1 OF X

CONSTRUCTION NOTES:

GENERAL:

1. DESIGN IS PER THE 2020 BUILDING CODE OF NEW YORK STATE (BCNYS) AND THE 2020 EXISTING BUILDING CODE OF NEW YORK STATE, COLLECTIVELY REFERRED TO AS THE (BCNYS).
2. THESE STRUCTURAL DRAWINGS ARE NOT INTENDED AS STAND ALONE DOCUMENTS. REFER TO FULL CONSTRUCTION DOCUMENT PACKAGE FOR COMPLETE PROJECT INFORMATION AND DETAILS.
3. VERIFY ALL DIMENSIONS IN THE FIELD AS WORK PROGRESSES AND REPORT ANY DISCREPANCIES BETWEEN EXISTING WORK AND CONTRACT DOCUMENTS TO DIRECTOR'S REPRESENTATIVE FOR CLARIFICATION BEFORE PROCEEDING WITH WORK.
4. DO NOT SCALE DRAWINGS.
5. ALL DETAILS AND NOTES ARE TYPICAL UNO.
6. PROVIDE ALL TEMPORARY SHORING AS REQUIRED BY THE MEANS AND METHODS UNDERTAKEN.
7. RETAIN A LICENSED PROFESSIONAL ENGINEER FOR THE DESIGN OF ALL TEMPORARY SHORING AND SHEETING AND PROVIDE STAMPED DRAWINGS AND CALCULATIONS FOR REVIEW BY THE ENGINEER OF RECORD (EOR).
8. PROVIDE ALL TEMPORARY BRACING UNTIL ALL REQUIRED STRUCTURAL SYSTEMS ARE IN PLACE
9. COMPONENTS NECESSARY FOR CONSTRUCTION SAFETY ARE THE FULL RESPONSIBILITY OF THE CONTRACTOR AND THE MEANS AND METHODS UNDERTAKEN.
10. OBSERVE ALL CURRENT OSHA REQUIREMENTS.
11. SPECIAL INSPECTIONS (SI) ARE REQUIRED FOR THE PROJECT. SI SHALL BE MADE BY THE STATE'S INDEPENDENT INSPECTION AGENCY. NOTIFY THE DIRECTOR'S REPRESENTATIVE PRIOR TO INSTALLING WORK THAT REQUIRES SI AND ALLOW ACCESS FOR THESE SI TO OCCUR IN A TIMELY MANNER. WORK REQUIRING SI INSTALLED WITHOUT NOTIFICATION SHALL BE CAUSE FOR REJECTION AND REPLACEMENT OF THE WORK.

2

CONCRETE PLACEMENT NOTES:

1. SEE STRUCTURAL DRAWINGS FOR CONCRETE SECTIONS AND DETAILS.
2. CONCRETE COVER DISTANCES: 1-1/4" UNO
3. PLACE ALL FORMWORK AND REINFORCEMENT PER CURRENT EDITION OF ACI 301.
4. TIE ALL REINFORCING SECURELY IN PLACE PRIOR TO CONCRETE POUR. WET SETTING OF DOWELS IS NOT PERMITTED.
5. FOLLOW THE RECOMMENDATIONS OF ACI 305R DURING HOT WEATHER PLACEMENT
6. FOLLOW THE RECOMMENDATIONS OF ACI 306R DURING COLD WEATHER PLACEMENT.
7. CONSOLIDATE ALL CONCRETE WITH A VIBRATOR PER ACI RECOMMENDATIONS, INCLUDING SLABS.
8. LEAVE FORMWORK IN PLACE TO AID IN CURING CONCRETE FOR A MINIMUM OF 7 DAYS PER ACI RECOMMENDATIONS. FORMWORK MAY BE STRIPPED SOONER ONLY IF THE CONCRETE IS CURED BY MEANS OF A SPRAY-ON DISSIPATING ACRYLIC POLYMER CURING COMPOUND, OR BY MOIST CURING METHODS. EARLY FORM REMOVAL AND CURING METHODS AND MATERIALS MUST BE APPROVED BY THE ENGINEER OR ARCHITECT.
9. DO NOT REMOVE FORMWORK OR SHORING AT BEAMS OR SUSPENDED SLABS, OR AT WALL OPENINGS BEFORE THE 7-DAY PERIOD.

MASONRY CONSTRUCTION NOTES:

1. USE MATERIALS FROM A SINGLE SOURCE FOR EACH TYPE OF MATERIAL THROUGHOUT THE PROJECT.
2. DO NOT USE MORTAR AS GROUT TO FILL CMU CORES. USE OF MORTAR AS GROUT IS CAUSE FOR REJECTION AND REPLACEMENT OF THE WORK.
3. DO NOT USE ADMIXTURES IN THE MORTAR UNLESS APPROVED IN WRITING.
4. FULLY BED BOTH FACE SHELLS AND WEBS OF CMU UNO.
5. PLACE VERTICAL STEEL BAR REINFORCEMENT AND GROUT WITHIN CMU CORES DETAILED ON THESE DRAWINGS AND PER NCMA TEK MANUAL 3.2 GROUTING CONCRETE MASONRY WALLS, LATEST EDITION.
6. PLACE SELF-CONSOLIDATING GROUT (SCG) IN MAXIMUM HEIGHTS UP TO 12 FEET.

STRUCTURAL STEEL FABRICATION / ERECTION NOTES:

1. FABRICATE STRUCTURAL STEEL COMPONENTS IN A SHOP WITH PERSONNEL SPECIALIZING IN THIS WORK AND HAVING A MINIMUM OF FIVE YEARS EXPERIENCE ON PROJECTS OF SIMILAR SCOPE AND COMPLEXITY.
2. PERFORM ALL WELDING BY PERSONNEL HAVING CURRENT AWS CERTIFICATION FOR THE TYPE OF WORK PERFORMED.
3. PREPARE AND SUBMIT SHOP DRAWINGS FOR REVIEW AND APPROVAL BEFORE ORDERING MATERIALS OR BEGINNING SHOP FABRICATION.
4. SHOP DRAWINGS SHALL NOT CONTAIN NOTATIONS FOR FIELD VERIFICATION OF DIMENSIONS OR CONDITIONS. ALL FIELD CONDITIONS SHALL BE FULLY VERIFIED BEFORE SHOP DRAWINGS ARE SUBMITTED FOR REVIEW. INCOMPLETE SHOP DRAWINGS OR DRAWINGS WITH THESE NOTATIONS WILL BE RETURNED FOR CORRECTION WITHOUT REVIEW
5. UNLESS NOTED OTHERWISE, FULLY SHOP FABRICATE ALL MEMBERS AND ASSEMBLIES NOTED TO BE HOT DIP GALVANIZED (HDG) BEFORE GALVANIZING. DO NOT DAMAGE GALVANIZED SURFACES IN ANY WAY (WELDING, CUTTING, ABRADING, ETC.) WITHOUT PRIOR APPROVAL IN WRITING BY THE DIRECTOR'S REPRESENTATIVE. REMOVE AND REPLACE ALL DAMAGED GALVANIZED FABRICATIONS.

STRUCTURAL DESIGN DATA

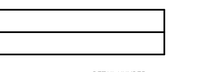
RISK CATEGORY	III
SOIL BEARING CAPACITY	3,500 PSF (PER GEOTECHNICAL REPORT DATED JANUAR...
LIVE LOADS	LIVE LOADS
LOBBIES AND FIRST FLOOR CORRIDORS	100 PSF
STAIRS AND EXITS	100 PSF
CLASSROOMS	40 PSF
OFFICES/CONFERENCE ROOMS	60 PSF
DEAD LOADS	DEAD LOADS
SELF-WEIGHT	PER MATERIALS
ROOF	120 PSF
SLAB ON METAL DECK	65 PSF
MEP ALLOWANCE	2 PSF (FLOORS) 5 PSF (ROOFS)
SNOW LOAD DESIGN	SNOW LOAD DESIGN
GROUND SNOW LOAD, Pg	25 PSF
FLAT ROOF SNOW LOAD, Pf	21 PSF
SNOW EXPOSURE FACTOR, Ce	1.0
SNOW LOAD IMPORTANCE FACTOR, Is	1.1
THERMAL FACTOR, Ct	1.0
DRIFT SURCHARGE	N/A
ROOF RAIN LOADS	ROOF RAIN LOADS
RAIN INTENSITY, i	3.71 INCHES PER HOUR
WIND LOAD DESIGN	WIND LOAD DESIGN
BASIC DESIGN WIND SPEED, Vult	130 MPH
SERVICE DESIGN WIND SPEED, Vasd	102 MPH
WIND EXPOSURE CATEGORY	D
INTERNAL PRESSURE COEFFICIENT, GCpi	+/- 0.18
2 MEAN ROOF HEIGHT, h	40 FT
2 VELOCITY PRESSUE, qh	45 PSF
SEISMIC DESIGN	SEISMIC DESIGN
SEISMIC LOAD IMPORTANCE FACTOR, Ie	1.25
MAPPED SPECTRAL RESPONSE ACCELERATION, Ss	0.286
MAPPED SPECTRAL RESPONSE ACCELERATION, S1	0.060
SPECTRAL RESPONSE COREFFICIENT, Sds	0.229
SPECTRAL RESPONSE COREFFICIENT, Sd1	0.095
SITE CLASSIFICATION (SOIL TYPE)	D
2 BASIC FORCE RESISTING SYSTEM	ORDINARY PLAIN MASONRY SHEAR WALLS
RESPONSE MADIFICATION FACTOR, R	1.5
SEISMIC DESIGN CATEGORY (SDC)	B

STRUCTURAL DRAWING LEGEND

NUMBER	TITLE
REF:	SCALE

STRUCTURAL DRAWING ABBREVIATIONS

ADD	ADDITIONAL
ADJ	ADJACENT
AFF	ABOVE FINISHED FLOOR
APPROX	APPROXIMATE
B/FTG	BOTTOM OF FOOTING
BLDG	BUILDING
BOT	BOTTOM
BP	BASE PLATE
BRG	BEARING
CANT	CANTILEVER
CFMF	COLD FORMED METAL FRAMING
CJ	CONTROL, CONTRACTION, OR CONSTRUCTION JOINT
CL	CENTER LINE
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONT	CONTINUOUS
COORD	COORDINATE
DIA	DIAMETER
DIM	DIMENSION
DN	DOWN
DO	DITTO
DWG	DRAWING
EA	EACH
EL	ELEVATION
EMBD	EMBED, EMBEDMENT
EOD	EDGE OF DECK
EOS	EDGE OF SLAB
EQ	EQUAL
EQUIP	EQUIPMENT
ES	EACH SIDE
EW	EACH WAY
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
FDN	FOUNDATION
FOW	FACE OF WALL
FS	FAR SIDE
FTG	FOOTING
GA	GAGE
GWB	GYPSUM WALL BOARD
HDG	HOT DIP GALVANIZED
HORIZ	HORIZONTAL
HSS	HOLLOW STRUCTURAL SHAPE
ID	INSIDE DIAMETER
INFO	INFORMATION
INT	INTERIOR
INV	INVERT
LG	LONG
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LOC	LOCATION
LVL	LAMINATED VENEER LUMBER
LW	LIGHT WEIGHT
MAX	MAXIMUM
MECH	MECHANICAL
MIN	MINIMUM
MISC	MISCELLANEOUS
MO	MASONRY OPENING
NIC	NOT IN CONTRACT
No.	NUMBER
NTS	NOT TO SCALE
NW	NORMAL WEIGHT
OC	ON CENTER
OD	OUTSIDE DIAMETER
OPNG	OPENING
OPP	OPPOSITE
PAF	POWDER ACTUATED FASTENER
PCF	POUNDS PER CUBIC FOOT
PERP	PERPENDICULAR
PL	PLATE
PLF	POUNDS PER LINEAR FOOT
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	PRESSURE TREATED
REINF	REINFORCEMENT
REQD	REQUIRED
REV	REVISED, REVISION
RO	ROUGH OPENING
SIM	SIMILAR
SP	SPACE, SPACES, SPACED
SQ	SQUARE
STD	STANDARD
STL	STEEL
T/	TOP OF
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
VIF	VERIFY IN FIELD
W/	WITH
WCJ	WALL CONTROL JOINT
WWR	WELDED WIRE REINFORCEMENT



CAST-IN-PLACE CONCRETE

EXISTING CONCRETE

EXISTING SUBGRADE, EARTH

GENERAL

GRAVEL BACKFILL, CMU GROUT

LOAD-BEARING MASONRY

MASONRY VENEER, MASONRY PARTITIONS

NON-SHRINK GROUT, DEPRESSED TOP OF FOUNDATION WALL

PLYWOOD

OSB - ORIENTED STRAND BOARD

RIGID INSULATION

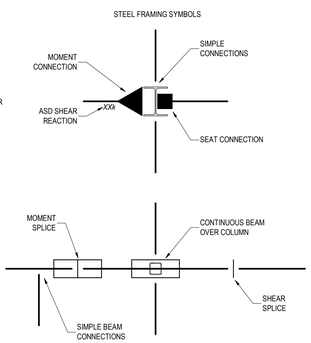
STEEL

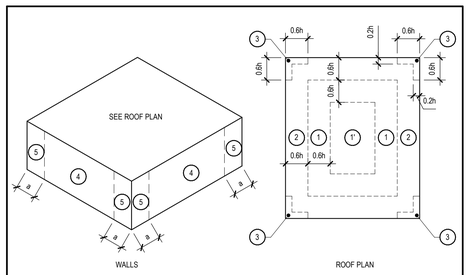
SUBBASE

TOP SOIL, LOAM

WASHED STONE

STEEL FRAMING SYMBOLS





COMPONENTS AND CLADDING WIND PRESSURES (ASCE 7-16)

DISTANCE "a" = 3 FT — EFFECTIVE WIND AREA = 10 SF

ZONE	LRFD WIND PRESSURE	ASD WIND PRESSURE
1	-84.4 PSF	-50.6 PSF
1'	-48.5 PSF	-29.1 PSF
2	-111.3 PSF	-66.8 PSF
3	-151.8 PSF	-91.1 PSF
4	+48.5 PSF / -52.5 PSF	+29.1 PSF / -31.5 PSF
5	+48.5 PSF / -64.7 PSF	+29.1PSF / -38.8 PSF

NOTES:

1. VALUES ARE CALCULATED ACCORDING TO ASCE 7-16 C+C PART 1 FOR BUILDING HEIGHT h ≤ 60 FT.

FLAT ROOF (SLOPE θ ≤ 3°)

NEW YORK STATE | Office of General Services

CONSULTANT

CERTIFICATE OF AUTHORIZATION No.: 0022677

BCA ARCHITECTS ENGINEERS

SPRING LINE DESIGN
ARCHITECTURE + ENGINEERING

BUILDING CODE COMPLIANCE:

COMPLIANCE STATEMENT:

TO THE BEST OF THE REGISTERED DESIGN PROFESSIONAL'S KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE DRAWINGS AND / OR SPECIFICATIONS ARE IN COMPLIANCE WITH THE 2020 UNIFORM CODE.

ENERGY CODE COMPLIANCE:

COMPLIANCE STATEMENT:

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WARNING:

THE ALTERATION OF THIS MATERIAL IN ANY WAY, UNLESS DONE UNDER THE DIRECTION OF A COMPARABLE PROFESSIONAL, I.E. ARCHITECT FOR AN ARCHITECT, ENGINEER FOR AN ENGINEER OR LANDSCAPE ARCHITECT FOR A LANDSCAPE ARCHITECT, IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND/OR REGULATIONS AND IS A CLASS 'A' MISDEMEANOR.

STATE OF NEW YORK · CHRISTOPHER B. SNYDER · 102422 · LICENSED PROFESSIONAL ENGINEER

REGISTRATION EXPIRES: 11/30/2025

CONTRACT:

CONSTRUCTION

TITLE:

RENOVATE INTERIOR SPACES

LOCATION:

STATE ARMORY
150-74 6TH AVE,
WHITESTONE, NY.

CLIENT:

NEW YORK STATE DIVISION OF MILITARY AND NAVEL AFFAIRS

MARK	DATE	DESCRIPTION
2	06/27/2025	ADDENDUM 02
	05/20/2025	BID DOCUMENTS

PROJECT NUMBER: 47592 – C

DESIGNED BY: NAC
DRAWN BY: NAC
FIELD CHECK:
APPROVED:

SHEET TITLE:

STRUCTURAL GENERAL NOTES, LOADS, AND LEGEND

DRAWING NUMBER:

S-001

SHEET 10 OF 94

24 x 36

1 BASEMENT SLAB ON GRADE PLAN

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

PLAN NORTH

24 x 36

NEW YORK STATE | Office of General Services

CONSULTANT

CERTIFICATE OF AUTHORIZATION No.: 0022677

BCA ARCHITECTS ENGINEERS

SPRING LINE DESIGN
ARCHITECTURE + ENGINEERING

BUILDING CODE COMPLIANCE:

COMPLIANCE STATEMENT:

TO THE BEST OF THE REGISTERED DESIGN PROFESSIONAL'S KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE DRAWINGS AND / OR SPECIFICATIONS ARE IN COMPLIANCE WITH THE 2020 UNIFORM CODE.

ENERGY CODE COMPLIANCE:

COMPLIANCE STATEMENT:

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STATE OF NEW YORK · CHRISTOPHER B. SNYDER · 027822 · LICENSED PROFESSIONAL ENGINEER

REGISTRATION EXPIRES:
11/30/2025

CONTRACT:
CONSTRUCTION

TITLE:
RENOVATE INTERIOR SPACES

LOCATION:
STATE ARMORY
150-74 6TH AVE,
WHITESTONE, NY.

CLIENT:
NEW YORK STATE DIVISION OF MILITARY AND NAVEL AFFAIRS

MARK	DATE	DESCRIPTION
2	06/27/2025	ADDENDUM 02
	05/20/2025	BID DOCUMENTS

PROJECT NUMBER:	47592 – C
DESIGNED BY:	NAC
DRAWN BY:	NAC
FIELD CHECK:	
APPROVED:	

SHEET TITLE:
BASEMENT SLAB ON GRADE PLAN

DRAWING NUMBER:
S-100

SHEET 11 OF 94

SECOND FLOOR FRAMING PLAN NOTES

1. PROJECT REFERENCE ELEVATION = (0'-0") AT TOP OF FIRST FLOOR SLAB
2. THE PROJECT REFERENCE ELEVATION IN NOTE 1 IS EQUIVALENT TO SITE ELEVATION 24.00'
3. TOP OF STEEL FRAMING (BOTTOM OF DECK) ON THIS PLAN = (+10'-6 1/2") ABOVE THE PROJECT REFERENCE ELEVATION IN NOTE 1
4. ELEVATIONS NOTED (+/-) ARE RELATIVE TO THE TOP OF STEEL FRAMING ELEVATION IN NOTE 3
5. SEE PLAN FOR STRUCTURAL STEEL COLUMNS, COORDINATE COLUMN LENGTH WITH EXISTING CONDITIONS
6. SEE 4/S-501 FOR CMU JAMB CONNECTION TO EXISTING ADJACENT STRUCTURE DETAILS
7. SEE 6/S-501 FOR CMU JAMB TOP AND BOTTOM ANCHORAGE DETAILS
8. SEE 7/S-501 FOR PRECAST CONCRETE LINTEL SCHEDULE AND DETAILS
9. SEE 1/S-510 FOR TYPICAL CONNECTIONS AT EXISTING WIDE FLANGE COLUMNS
10. SEE 2/S-510 FOR TYPICAL CONNECTIONS AT HSS COLUMNS
11. SEE 3/S-510 FOR TYPICAL DOUBLE ANGLE CONNECTIONS
12. SEE 6/S-510 FOR TYPICAL TRANSFER GIRDER (BEAM SUPPORTING COLUMN)
13. SEE PLAN AND 2/S-501 FOR FLOOR DECK REQUIREMENTS
14. SEE S-001 FOR ADDITIONAL REQUIREMENTS

1 SECOND FLOOR FRAMING PLAN

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

PLAN NORTH

24 x 36

NEW YORK STATE | Office of General Services

CONSULTANT

CERTIFICATE OF AUTHORIZATION No.: 0022677

BCA ARCHITECTS ENGINEERS

SPRING LINE DESIGN
ARCHITECTURE + ENGINEERING

BUILDING CODE COMPLIANCE:

COMPLIANCE STATEMENT:

TO THE BEST OF THE REGISTERED DESIGN PROFESSIONAL'S KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE DRAWINGS AND / OR SPECIFICATIONS ARE IN COMPLIANCE WITH THE 2020 UNIFORM CODE.

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STATE OF NEW YORK · CHRISTOPHER B. SNYDER · 102822 · LICENSED PROFESSIONAL ENGINEER

REGISTRATION EXPIRES: 11/30/2025

CONTRACT: CONSTRUCTION

TITLE: RENOVATE INTERIOR SPACES

LOCATION: STATE ARMORY, 150-74 6TH AVE, WHITESTONE, NY.

CLIENT: NEW YORK STATE DIVISION OF MILITARY AND NAVEL AFFAIRS

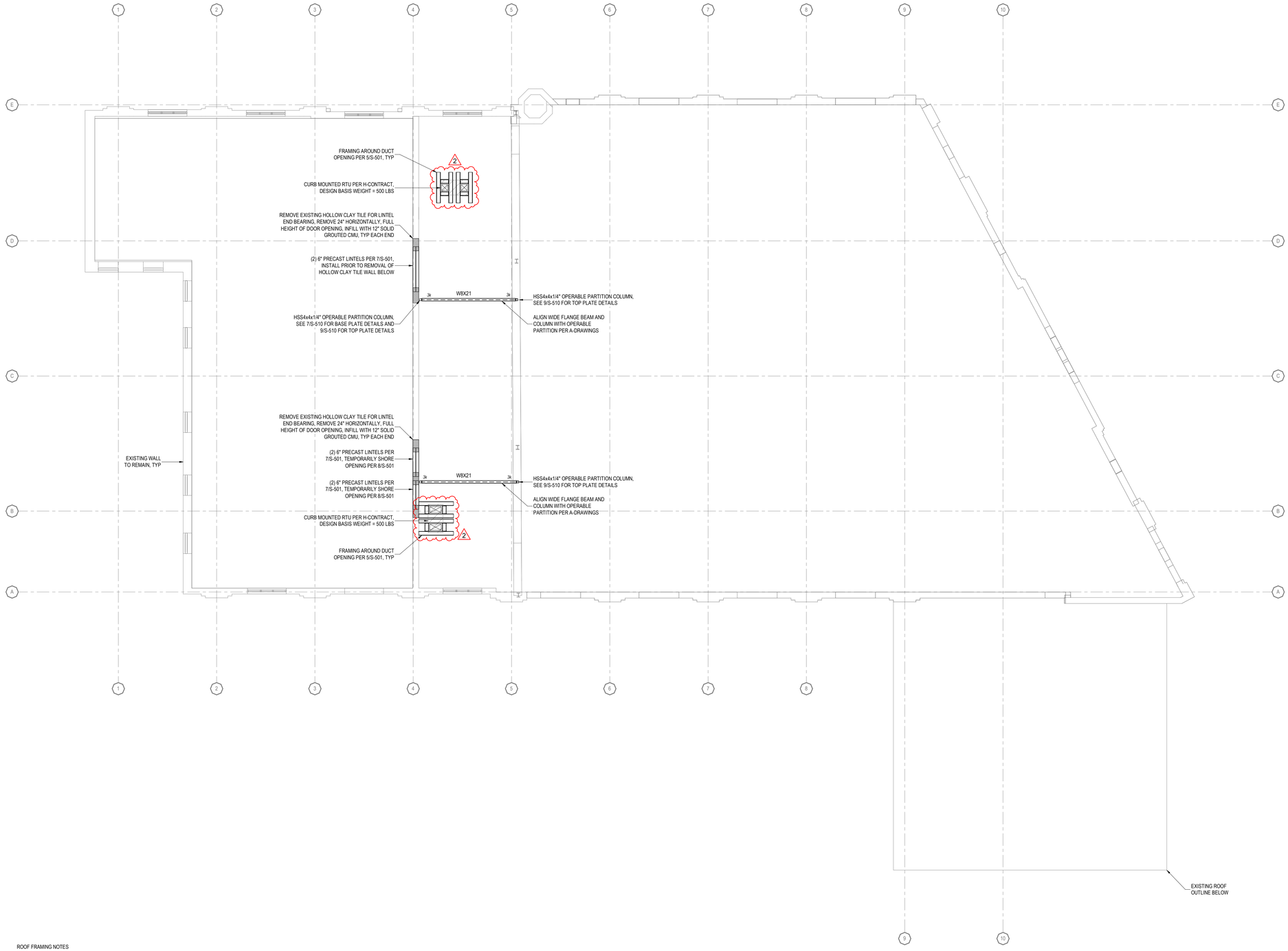
MARK	DATE	DESCRIPTION
2	06/27/2025	ADDENDUM 02
	05/20/2025	BID DOCUMENTS

PROJECT NUMBER:	47592 – C
DESIGNED BY:	NAC
DRAWN BY:	NAC
FIELD CHECK:	
APPROVED:	

SHEET TITLE: SECOND FLOOR FRAMING PLAN

DRAWING NUMBER: S-101

SHEET 12 OF 94



ROOF FRAMING NOTES

1. SEE PLAN FOR STRUCTURAL STEEL COLUMNS, COORDINATE COLUMN LENGTH WITH EXISTING CONDITIONS
2. SEE 4/S-501 FOR CMU JAMB CONNECTION TO EXISTING ADJACENT STRUCTURE DETAILS
3. SEE 5/S-501 FOR EXISTING SLAB PENETRATION SUPPORT AND DETAILS
4. SEE 6/S-501 FOR CMU JAMB TOP AND BOTTOM ANCHORAGE DETAILS
5. SEE 7/S-501 FOR PRECAST CONCRETE LINTEL SCHEDULE AND DETAILS
6. SEE 2/S-510 FOR TYPICAL CONNECTIONS AT HSS COLUMNS
7. SEE 6/S-510 FOR TYPICAL TRANSFER GIRDER (BEAM SUPPORTING COLUMN)
8. ROOF DECK OPENINGS AND ALL EQUIPMENT SUPPORT FRAMING SHALL ALIGN WITH MEP-DRAWINGS, A-DRAWINGS, AND APPROVED SHOP DRAWINGS FOR ALL TRADES. ADJUST FRAMING TO FIT THE ACTUAL SIZE, WEIGHT, AND CONFIGURATION OF EQUIPMENT, DUCTS, AND UTILITIES BASED ON APPROVED SUBMITTALS
9. SEE S-001 FOR ADDITIONAL REQUIREMENTS

1 ROOF FRAMING PLAN

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

PLAN NORTH

24 x 36

NEW YORK STATE | Office of General Services

CONSULTANT

CERTIFICATE OF AUTHORIZATION No.: 0022677

BCA ARCHITECTS ENGINEERS

SPRING LINE DESIGN
ARCHITECTURE + ENGINEERING

BUILDING CODE COMPLIANCE:

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STATE OF NEW YORK · CHRISTOPHER B. SNYDER · 102822 · LICENSED PROFESSIONAL ENGINEER

REGISTRATION EXPIRES: 11/30/2025

CONTRACT:

CONSTRUCTION

TITLE:

RENOVATE INTERIOR SPACES

LOCATION:

STATE ARMORY
150-74 6TH AVE,
WHITESTONE, NY.

CLIENT:

NEW YORK STATE DIVISION OF MILITARY AND NAVEL AFFAIRS

MARK	DATE	DESCRIPTION
2	06/27/2025	ADDENDUM 02
	05/20/2025	BID DOCUMENTS

PROJECT NUMBER:	47592 – C
DESIGNED BY:	NAC
DRAWN BY:	NAC
FIELD CHECK:	
APPROVED:	

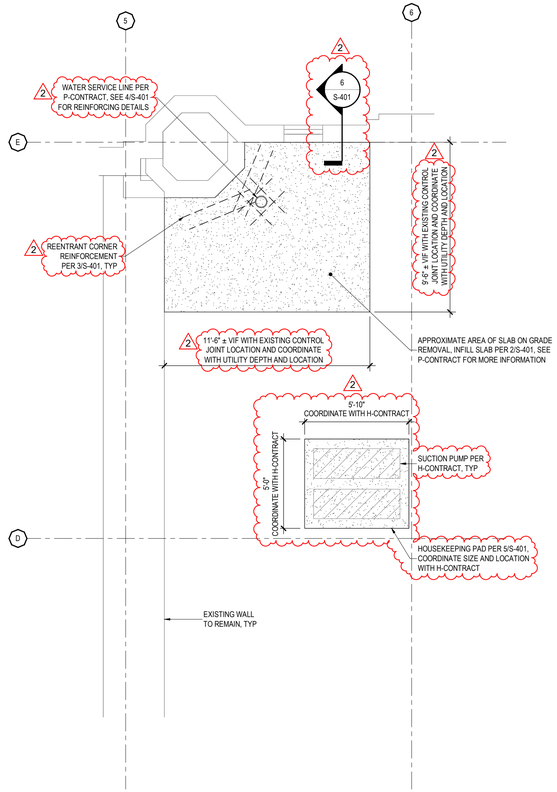
SHEET TITLE:

ROOF FRAMING PLAN

DRAWING NUMBER:

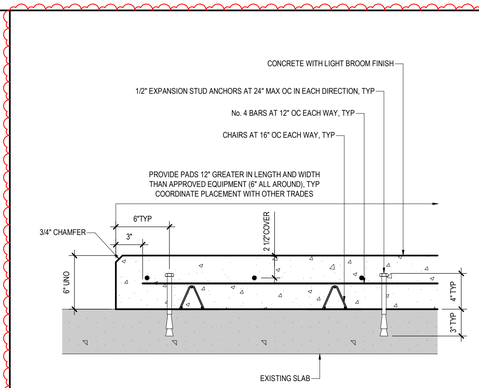
S-102

SHEET 13 OF 94

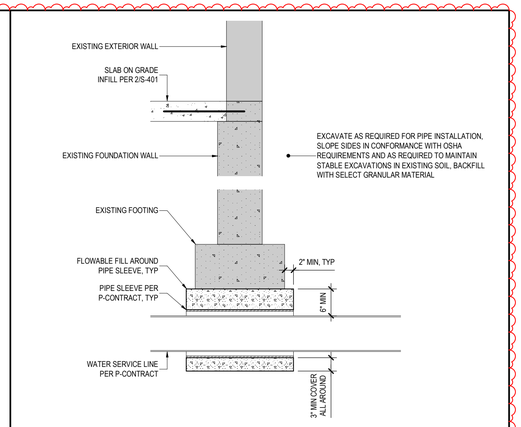


1	ENLARGED BASEMENT SLAB PLAN
REF: 1 / S-100	SCALE: 1/4" = 1'-0"

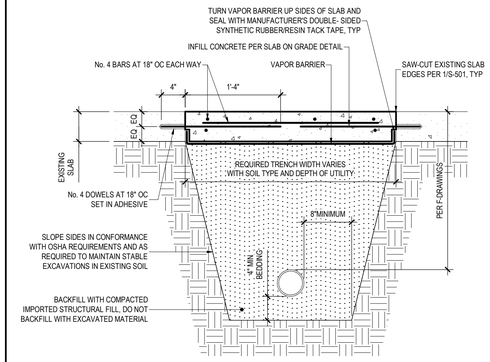
PLAN NORTH



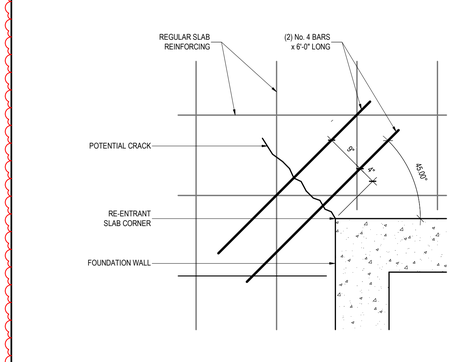
5	HOUSEKEEPING PAD DETAIL
REF: 1 / S-401	SCALE: 1 1/2" = 1'-0"



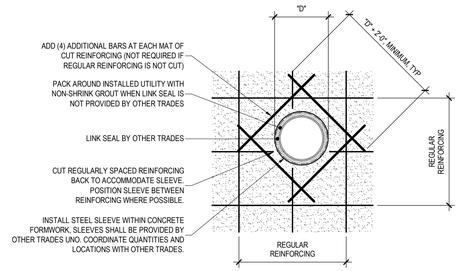
6	FIRE SERVICE ENTRANCE RESTRAINT DETAIL
REF: 1 / S-401	SCALE: 3/4" = 1'-0"



2	SLAB ON GRADE INFILL
REF: 1 / S-401	SCALE: 1" = 1'-0"



3	SLAB REENTRANT CORNER REINFORCEMENT
REF: 1 / S-401	SCALE: 3/4" = 1'-0"



4	CONCRETE SLEEVE DETAIL
REF: 1 / S-401	SCALE: 3/4" = 1'-0"

24 x 36

Office of General Services

CONSULTANT

CERTIFICATE OF AUTHORIZATION No.: 0022677

BCA ARCHITECTS ENGINEERS

SPRING LINE DESIGN
ARCHITECTURE + ENGINEERING

BUILDING CODE COMPLIANCE:

COMPLIANCE STATEMENT:

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STATE OF NEW YORK · CHRISTOPHER B. SNYDER · LICENSED PROFESSIONAL ENGINEER · 092422

REGISTRATION EXPIRES: 11/30/2025

CONTRACT:

CONSTRUCTION

TITLE:

RENOVATE INTERIOR SPACES

LOCATION:

STATE ARMORY
150-74 6TH AVE,
WHITESTONE, NY.

CLIENT:

NEW YORK STATE DIVISION OF MILITARY AND NAVEL AFFAIRS

MARK	DATE	DESCRIPTION
2	06/27/2025	ADDENDUM 02
	05/20/2025	BID DOCUMENTS

PROJECT NUMBER:	47592 – C
DESIGNED BY:	NAC
DRAWN BY:	NAC
FIELD CHECK:	
APPROVED:	

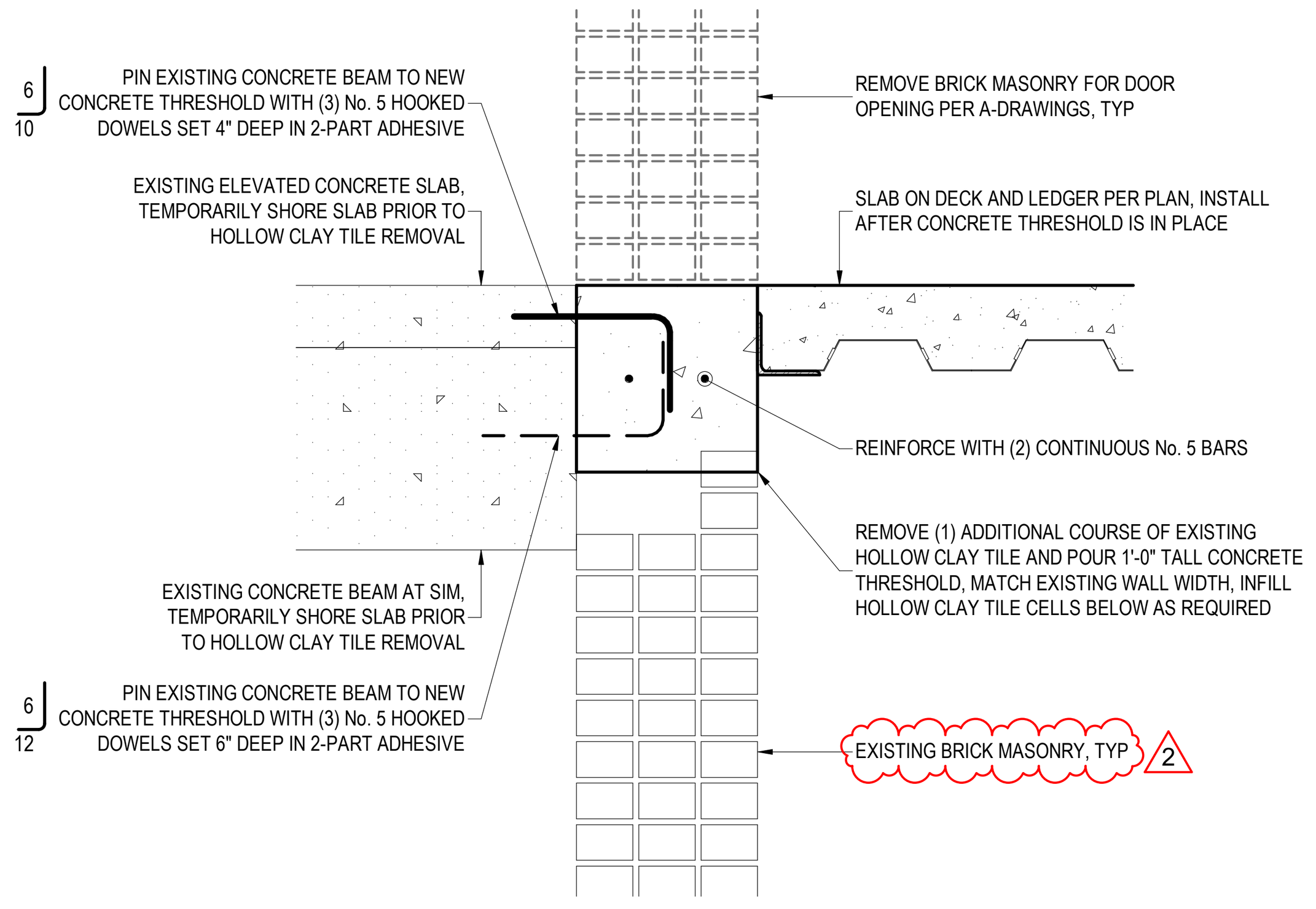
SHEET TITLE:

ENLARGED BASEMENT SLAB PLAN AND DETAILS

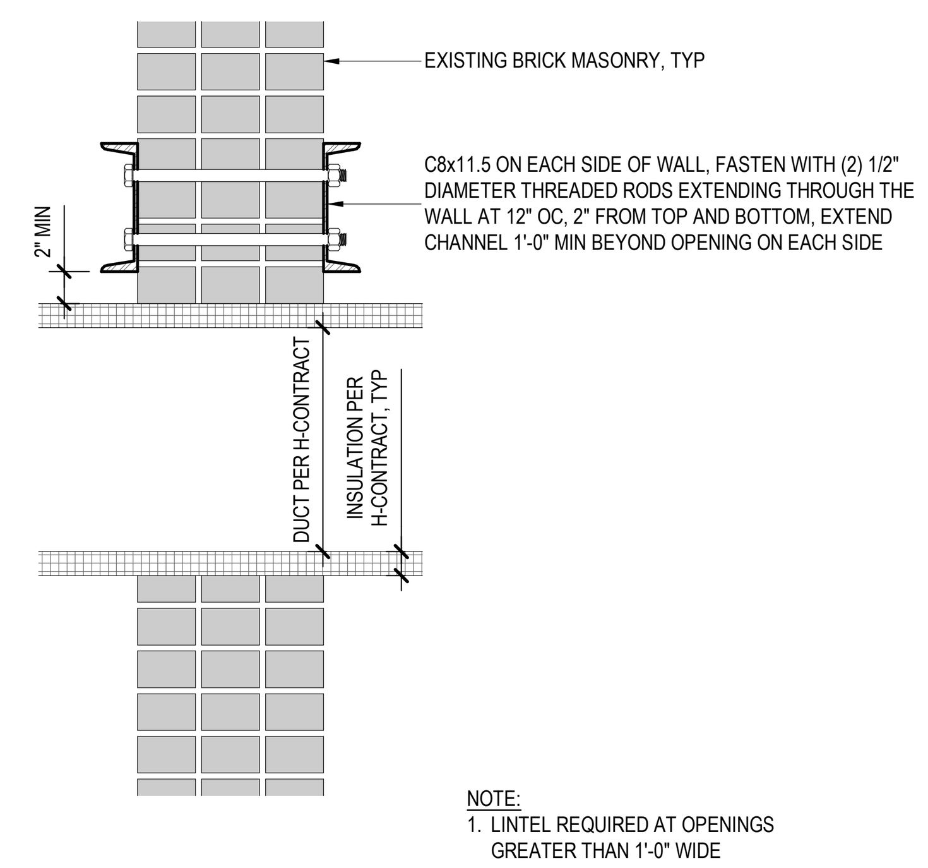
DRAWING NUMBER:

S-401

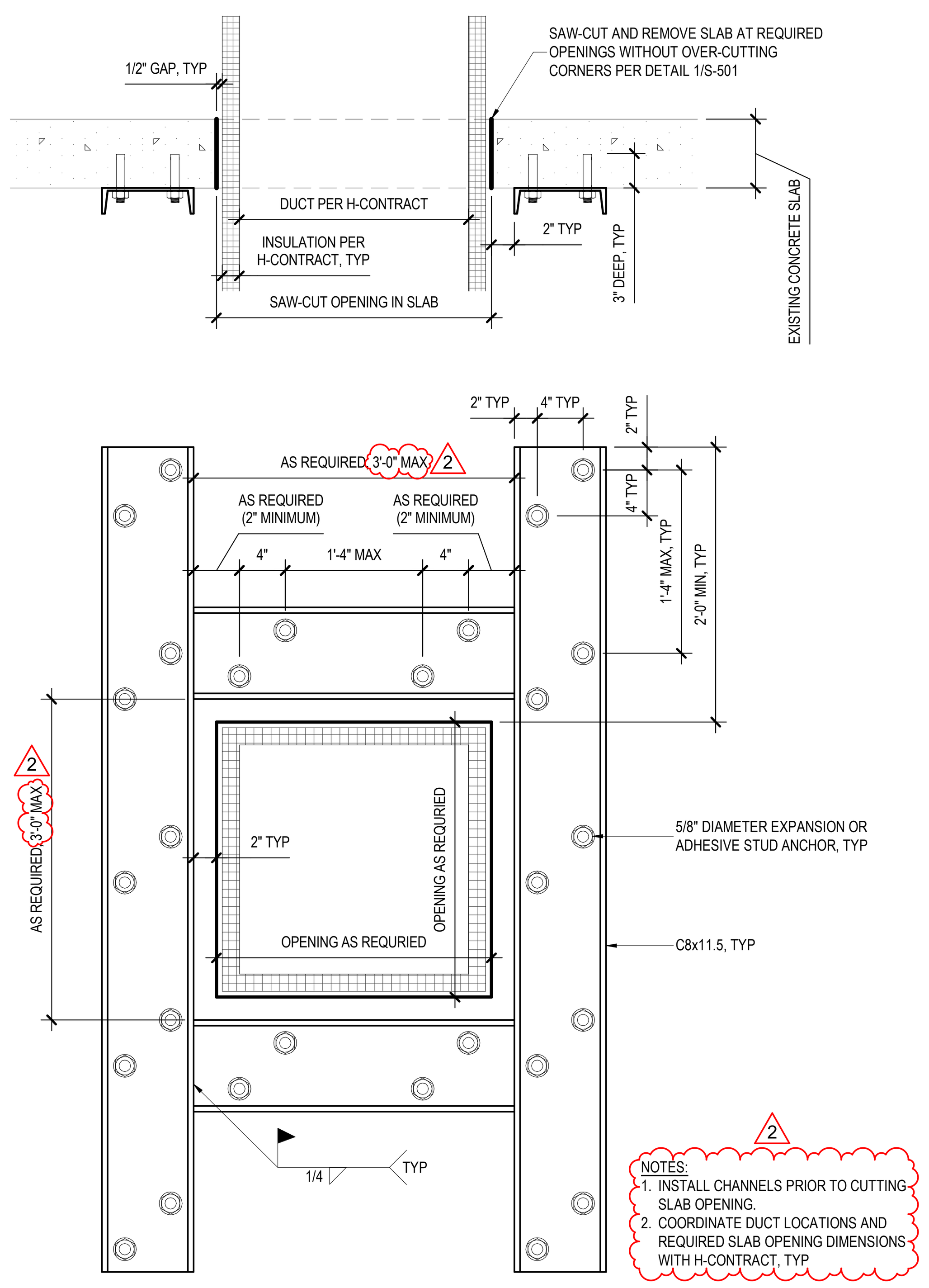
SHEET 14 OF 94



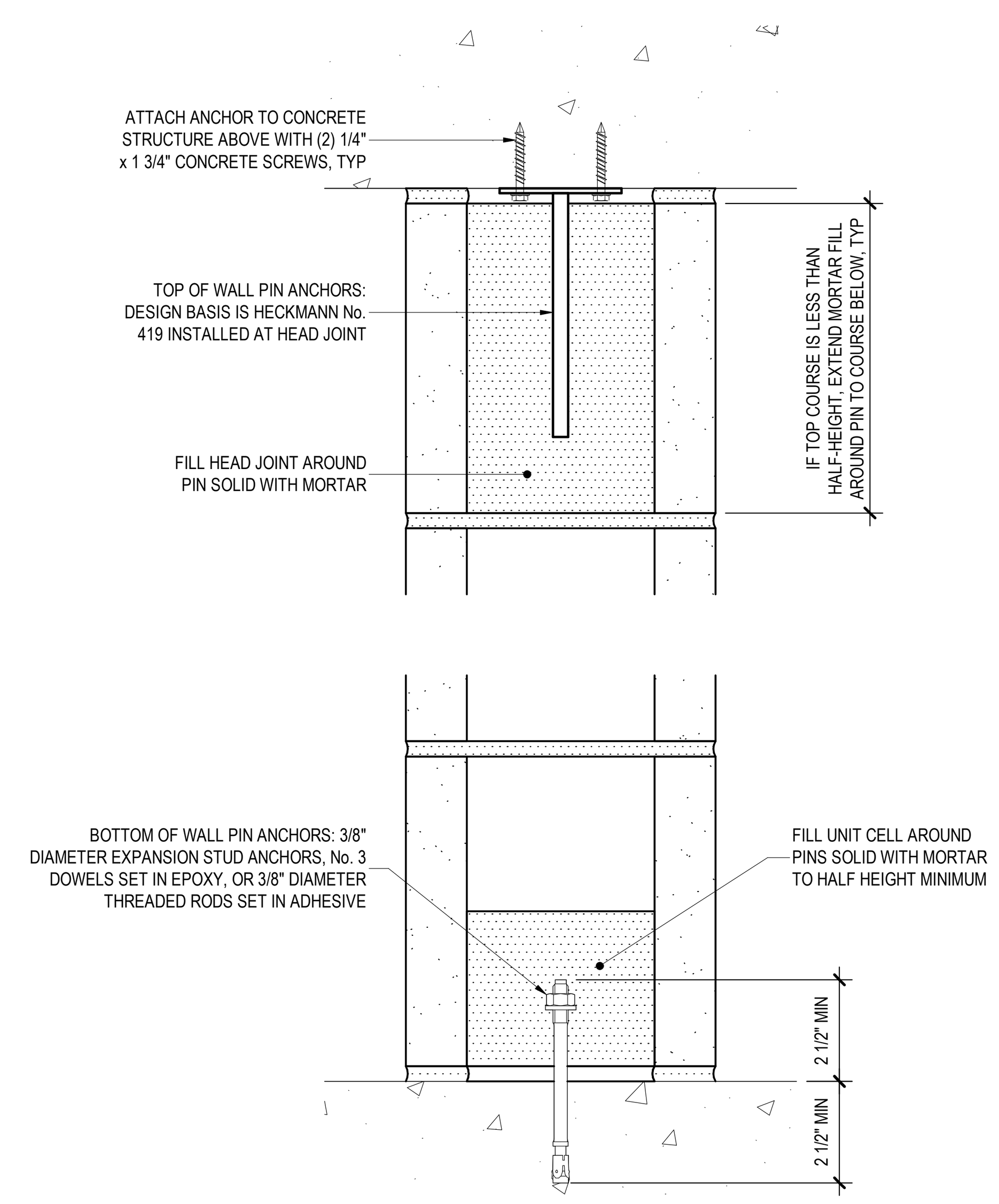
9	SECTION AT SECOND FLOOR DOOR THRESHOLD
REF: 1 / S-101	SCALE: 1" = 1'-0"



10	SECTION AT PRECAST LINTEL BEARING
	SCALE: 1" = 1'-0"

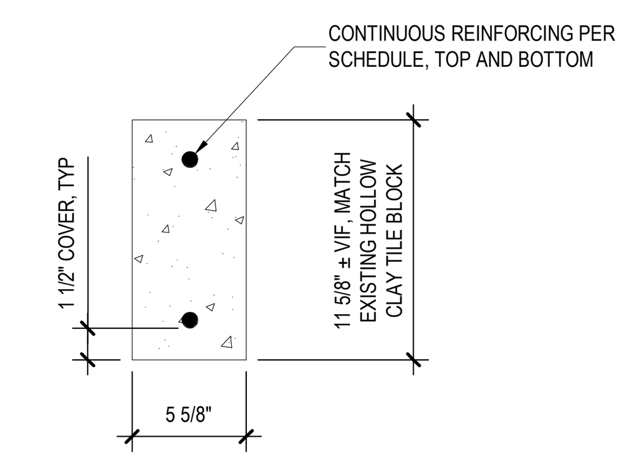


5	SLAB PENETRATION DETAIL
REF: 1 / S-102	SCALE: 1" = 1'-0"



6	CMU JAMB ANCHORAGE DETAIL
REF: 1 / S-101	SCALE: 3" = 1'-0"

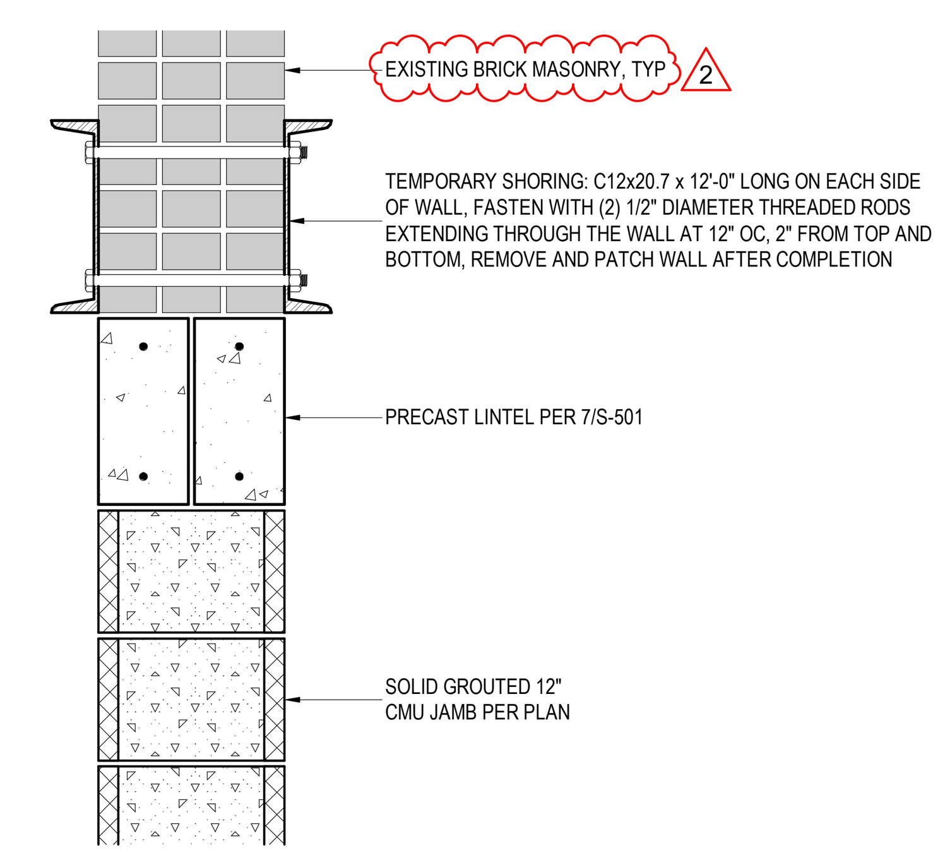
PRECAST CONCRETE LINTEL REINFORCING SCHEDULE	
CLEAR MASONRY OPENING WIDTH	REINFORCING
0'-6" TO 5'-4"	(2) No. 4
5'-5" TO 8'-0"	(2) No. 5



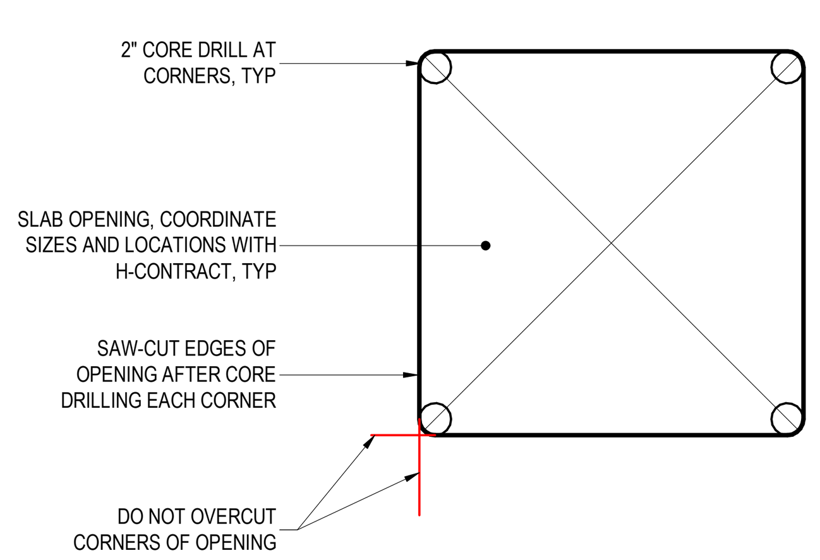
PRECAST LINTEL NOTES:

1. PROVIDE TEMPORARY SHORING OF MASONRY CONSTRUCTION ABOVE TO ACCOMMODATE SAFE INSTALLATION WHILE PREVENTING SETTLEMENT, MOVEMENT, CRACKING, OR DISTORTION OF MATERIALS.
2. SUBMIT A TEMPORARY SHORING DESIGN SIGNED AND SEALED BY A NY STATE LICENSED PE FOR EOR REVIEW.
3. PROVIDE 8" MIN BEARING OF LINTELS AT EACH END UNO
4. PROVIDE CUTTING AND PATCHING OF ALL SURROUNDING MATERIALS AND FINISHES REQUIRED TO INSTALL LINTELS.
5. CUT ALL NEW MASONRY TO FIT WITHIN AND MATCH EXISTING MASONRY BOND PATTERN.
6. CUT ALL NEW MASONRY AS REQUIRED AND BED / SLUSH SOLID AROUND LINTELS FOR SOLID BEARING

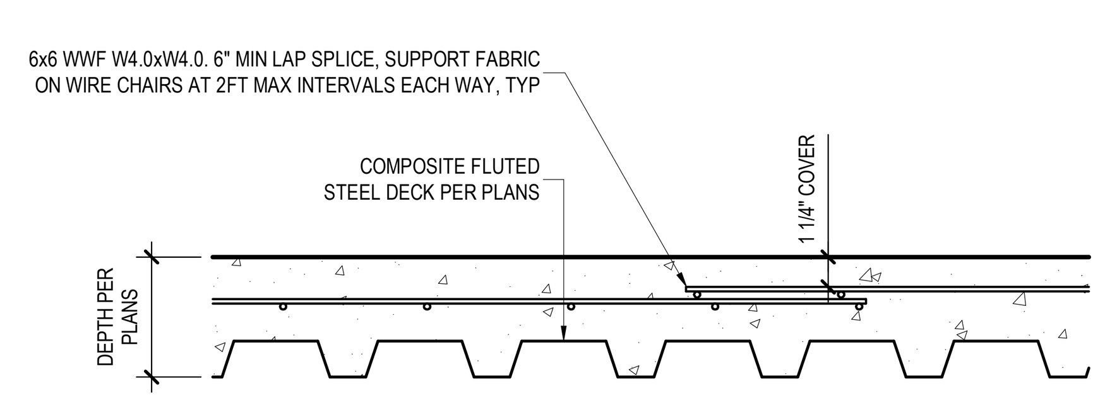
7	PRECAST CONCRETE LINTEL SCHEDULE
REF: 1 / S-101	SCALE: 1/2" = 1'-0"



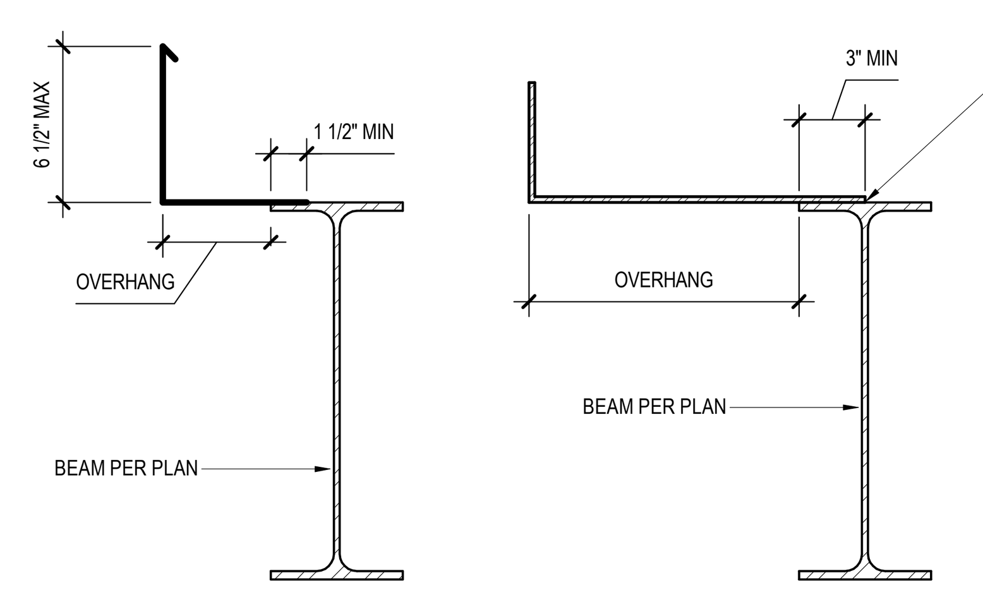
8	SECTION AT PRECAST LINTEL BEARING
REF: 1 / S-101	SCALE: 1" = 1'-0"



1	PENETRATION IN EXISTING SLAB DETAIL
REF: 1 / S-401	SCALE: 1" = 1'-0"

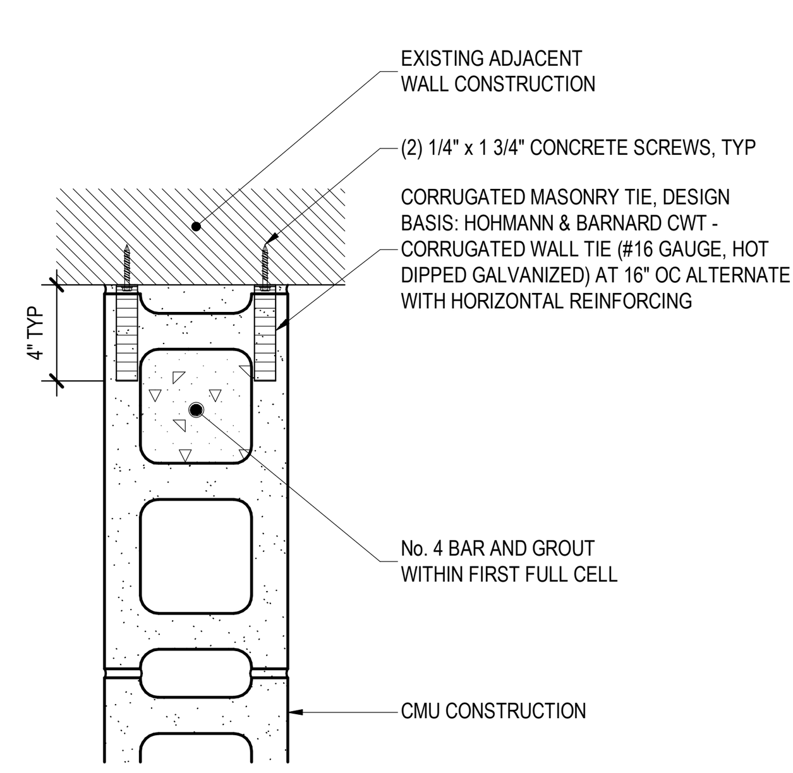


2	SLAB ON METAL DECK DETAIL
REF: 1 / S-101	SCALE: 1 1/2" = 1'-0"



POUR STOP SCHEDULE	
OVERHANG	GAGE
4" OR LESS	16
4" TO 9"	12
9" TO 12"	1/4" PLATE

3	DECK POUR STOP SCHEDULE
REF: 1 / S-101	SCALE: 1 1/2" = 1'-0"



4	CMU JAMB CONNECTION TO EXISTING
REF: 1 / S-101	SCALE: 1 1/2" = 1'-0"

24 x 36

NEW YORK STATE Office of General Services

CONSULTANT

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CONTRACT: CONSTRUCTION

TITLE: RENOVATE INTERIOR SPACES

LOCATION: STATE ARMORY, 150-74 6TH AVE, WHITESTONE, NY.

CLIENT: NEW YORK STATE DIVISION OF MILITARY AND NAVEL AFFAIRS

MARK	DATE	DESCRIPTION
2	06/27/2025	ADDENDUM 02
	05/20/2025	BID DOCUMENTS

PROJECT NUMBER: 47592 – C

DESIGNED BY: NAC

DRAWN BY: NAC

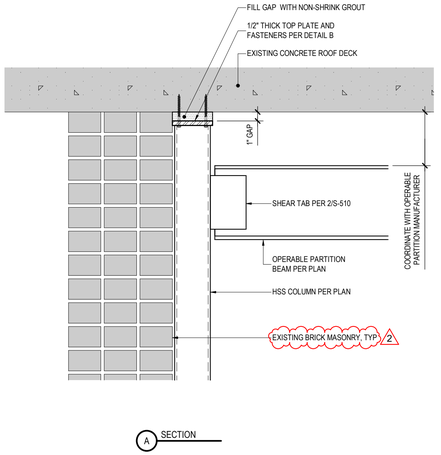
FIELD CHECK:

APPROVED:

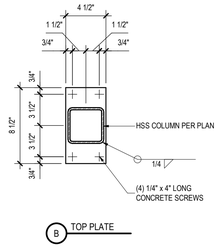
SHEET TITLE: CONCRETE AND MASONRY SECTIONS AND DETAILS

DRAWING NUMBER: S-501

SHEET 15 OF 94



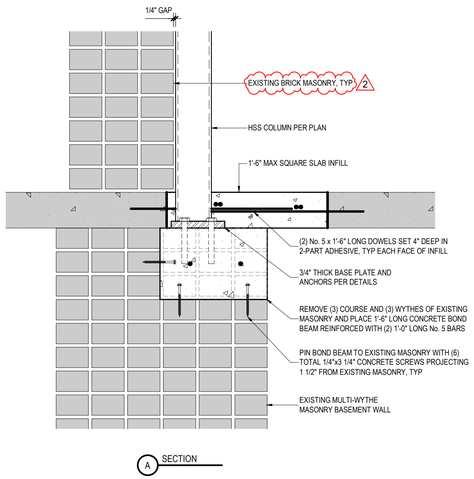
A SECTION



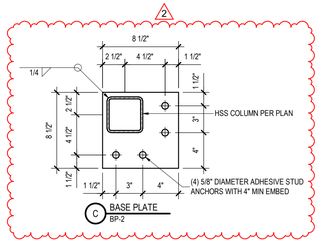
B TOP PLATE

9 OPERABLE PARTITION COLUMN TOP PLATE DETAIL

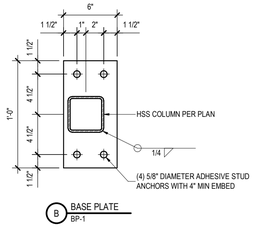
REF: 1 / S-102 SCALE: 1 1/2" = 1'-0"



A SECTION



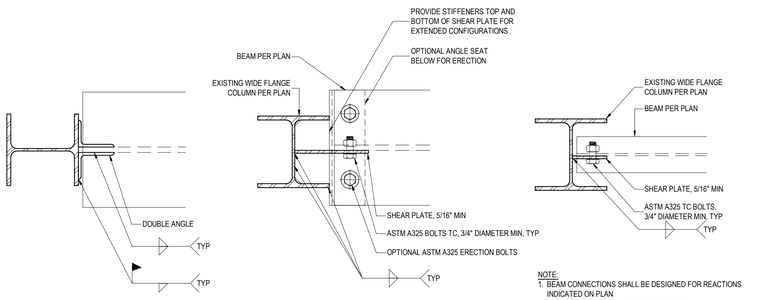
C BASE PLATE BP-2



B BASE PLATE BP-1

4 COLUMN BEARING ON EXISTING MASONRY

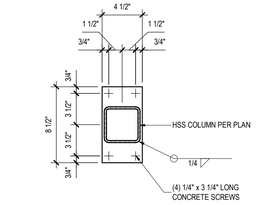
REF: 1 / S-101 SCALE: 1 1/2" = 1'-0"



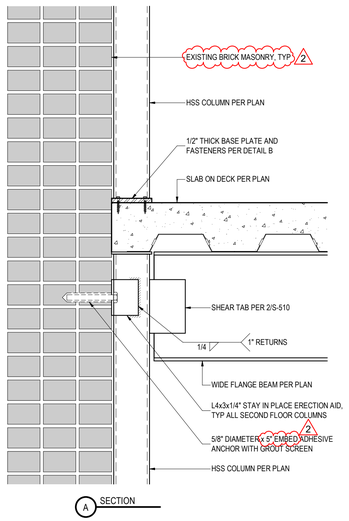
NOTE:
1. BEAM CONNECTIONS SHALL BE DESIGNED FOR REACTIONS INDICATED ON PLAN
2. LOCALLY REMOVE EXISTING CONCRETE COLUMN ENCASEMENT AS REQUIRED TO INSTALL CONNECTION AND PATCH ENCASEMENT AFTER CONNECTION INSTALLATION. 2

1 BEAM TO EXISTING COLUMN CONNECTIONS

REF: 1 / S-101 SCALE: 1 1/2" = 1'-0"



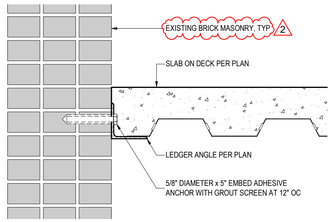
B BASE PLATE BP-1



A SECTION

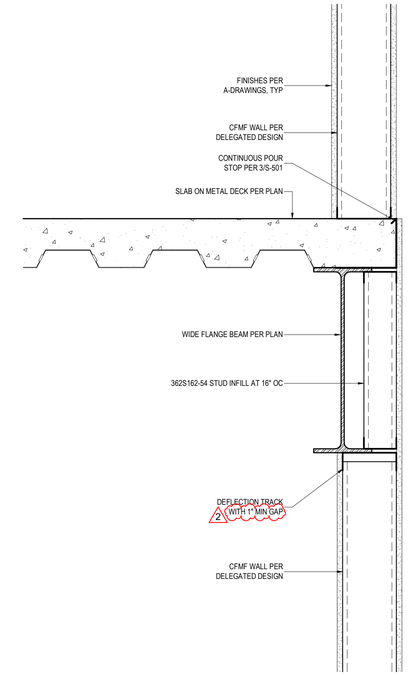
7 OPERABLE PARTITION COLUMN BASE PLATE DETAIL

REF: 1 / S-102 SCALE: 1 1/2" = 1'-0"



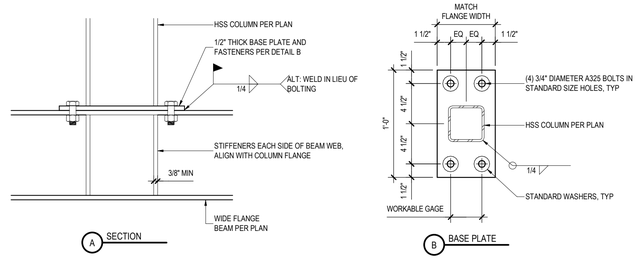
5 LEDGER ANGLE DETAIL

REF: 1 / S-101 SCALE: 1 1/2" = 1'-0"



8 TYPICAL EDGE OF DECK SECTION

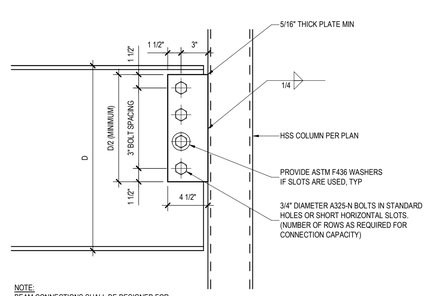
REF: 1 / S-101 SCALE: 1 1/2" = 1'-0"



A SECTION B BASE PLATE

6 BEAM SUPPORTING COLUMN

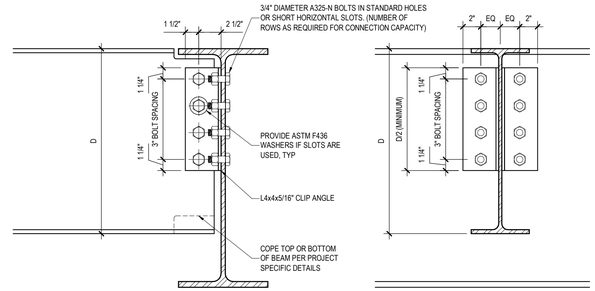
REF: 1 / S-101 SCALE: 1 1/2" = 1'-0"



NOTE:
BEAM CONNECTIONS SHALL BE DESIGNED FOR REACTIONS INDICATED ON THE PLANS.

2 TYPICAL SINGLE PLATE CONNECTIONS

REF: 1 / S-101 SCALE: 1 1/2" = 1'-0"



NOTE:
BEAM CONNECTIONS SHALL BE DESIGNED FOR REACTIONS INDICATED ON THE PLANS.

3 TYPICAL DOUBLE CLIP ANGLE CONNECTIONS

REF: 1 / S-101 SCALE: 1 1/2" = 1'-0"

24 x 36

NEW YORK STATE | Office of General Services

CONSULTANT

CERTIFICATE OF AUTHORIZATION No.: 0022677

BCA ARCHITECTS ENGINEERS

SPRING LINE DESIGN
ARCHITECTURE + ENGINEERING

BUILDING CODE COMPLIANCE:

COMPLIANCE STATEMENT:

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ENERGY CODE COMPLIANCE:

COMPLIANCE STATEMENT:

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WARNING:

STATE OF NEW YORK · CHRISTOPHER B. SNYDER · LICENSED PROFESSIONAL ENGINEER · 092552

REGISTRATION EXPIRES: 11/30/2025

MARK	DATE	DESCRIPTION
2	06/27/2025	ADDENDUM 02
	05/20/2025	BID DOCUMENTS

PROJECT NUMBER: 47592 – C

DESIGNED BY: NAC
DRAWN BY: NAC
FIELD CHECK:
APPROVED:

CONTRACT: CONSTRUCTION

TITLE: RENOVATE INTERIOR SPACES

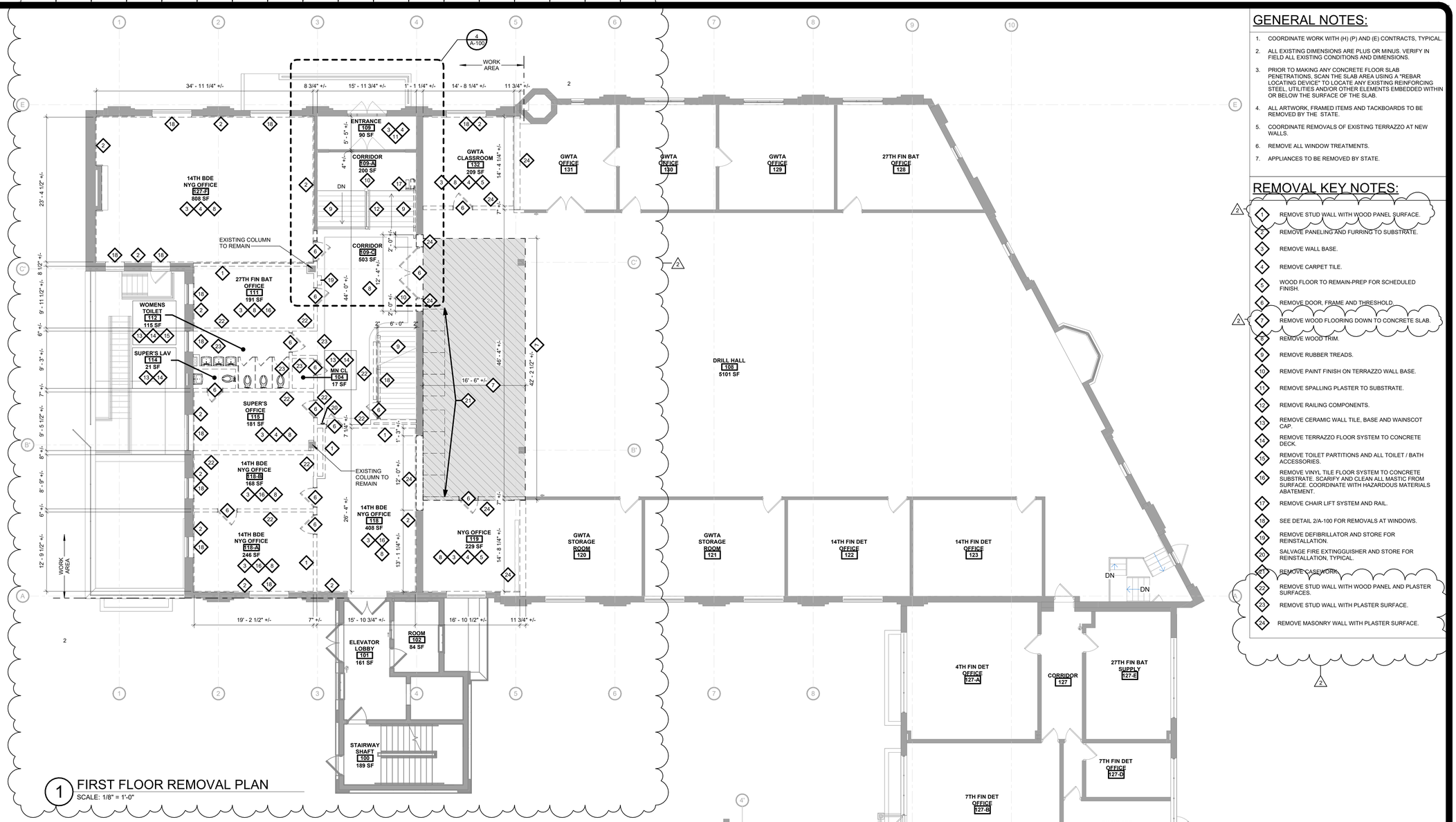
LOCATION: STATE ARMORY, 150-74 6TH AVE, WHITESTONE, NY.

CLIENT: NEW YORK STATE DIVISION OF MILITARY AND NAVEL AFFAIRS

SHEET TITLE: FRAMING SECTIONS AND DETAILS

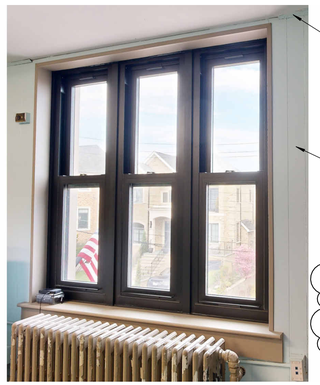
DRAWING NUMBER: S-510

SHEET 16 OF 94



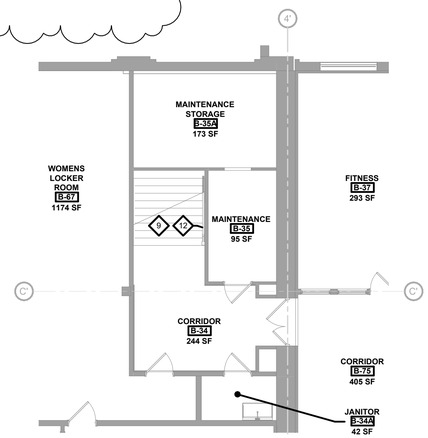
1 FIRST FLOOR REMOVAL PLAN

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



2 TYPICAL REMOVALS AT WINDOWS

SCALE: 1" = 1'-0"



3 PARTIAL BASEMENT REMOVAL PLAN

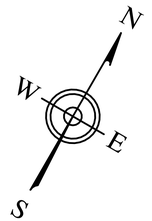
SCALE: 1/8" = 1'-0"

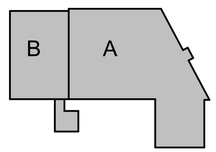
GENERAL NOTES:

1. COORDINATE WORK WITH (H) (P) AND (E) CONTRACTS, TYPICAL.
2. ALL EXISTING DIMENSIONS ARE PLUS OR MINUS. VERIFY IN FIELD ALL EXISTING CONDITIONS AND DIMENSIONS.
3. PRIOR TO MAKING ANY CONCRETE FLOOR SLAB PENETRATIONS, SCAN THE SLAB AREA USING A "REBAR LOCATING DEVICE" TO LOCATE ANY EXISTING REINFORCING STEEL, UTILITIES AND/OR OTHER ELEMENTS EMBEDDED WITHIN OR BELOW THE SURFACE OF THE SLAB.
4. ALL ARTWORK, FRAMED ITEMS AND TACKBOARDS TO BE REMOVED BY THE STATE.
5. COORDINATE REMOVALS OF EXISTING TERRAZZO AT NEW WALLS.
6. REMOVE ALL WINDOW TREATMENTS.
7. APPLIANCES TO BE REMOVED BY STATE.

REMOVAL KEY NOTES:

1. REMOVE STUD WALL WITH WOOD PANEL SURFACE.
2. REMOVE PANELING AND FURRING TO SUBSTRATE.
3. REMOVE WALL BASE.
4. REMOVE CARPET TILE.
5. WOOD FLOOR TO REMAIN-PREP FOR SCHEDULED FINISH.
6. REMOVE DOOR, FRAME AND THRESHOLD.
7. REMOVE WOOD FLOORING DOWN TO CONCRETE SLAB.
8. REMOVE WOOD TRIM.
9. REMOVE RUBBER TREADS.
10. REMOVE PAINT FINISH ON TERRAZZO WALL BASE.
11. REMOVE SPALLING PLASTER TO SUBSTRATE.
12. REMOVE RAILING COMPONENTS.
13. REMOVE CERAMIC WALL TILE, BASE AND WAINSCOT CAP.
14. REMOVE TERRAZZO FLOOR SYSTEM TO CONCRETE DECK.
15. REMOVE TOILET PARTITIONS AND ALL TOILET / BATH ACCESSORIES.
16. REMOVE VINYL TILE FLOOR SYSTEM TO CONCRETE SUBSTRATE. SCARIFY AND CLEAN ALL MASTIC FROM SURFACE. COORDINATE WITH HAZARDOUS MATERIALS ABATEMENT.
17. REMOVE CHAIR LIFT SYSTEM AND RAIL.
18. SEE DETAIL 2/A-100 FOR REMOVALS AT WINDOWS.
19. REMOVE DEFIBRILLATOR AND STORE FOR REINSTALLATION.
20. SALVAGE FIRE EXTINGUISHER AND STORE FOR REINSTALLATION, TYPICAL.
21. REMOVE CASEWORK.
22. REMOVE STUD WALL WITH WOOD PANEL AND PLASTER SURFACES.
23. REMOVE STUD WALL WITH PLASTER SURFACE.
24. REMOVE MASONRY WALL WITH PLASTER SURFACE.





KEY PLAN

NEW YORK STATE | Office of General Services

DESIGN & CONSTRUCTION

CONSULTANT

CERTIFICATE OF AUTHORIZATION No.:

BCA ARCHITECTS ENGINEERS

BUILDING CODE COMPLIANCE:

COMPLIANCE STATEMENT:

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REGISTERED ARCHITECT TRAVIS C OVERTON 03589 STATE OF NEW YORK

REGISTRATION EXPIRES: 03/31/2027

CONTRACT:

CONSTRUCTION

TITLE:

RENOVATE INTERIOR SPACES

LOCATION:

STATE ARMORY
150-74 6TH AVE,
WHITESTONE, NY.

CLIENT:

NEW YORK STATE DIVISION OF MILITARY AND NAVAL AFFAIRS

MARK	DATE	DESCRIPTION
2	06/27/2025	ADDENDUM 02
	05/20/2025	BID DOCUMENTS

PROJECT NUMBER:	47592 – C
DESIGNED BY:	TCO
DRAWN BY:	WTF
FIELD CHECK:	
APPROVED:	

SHEET TITLE:

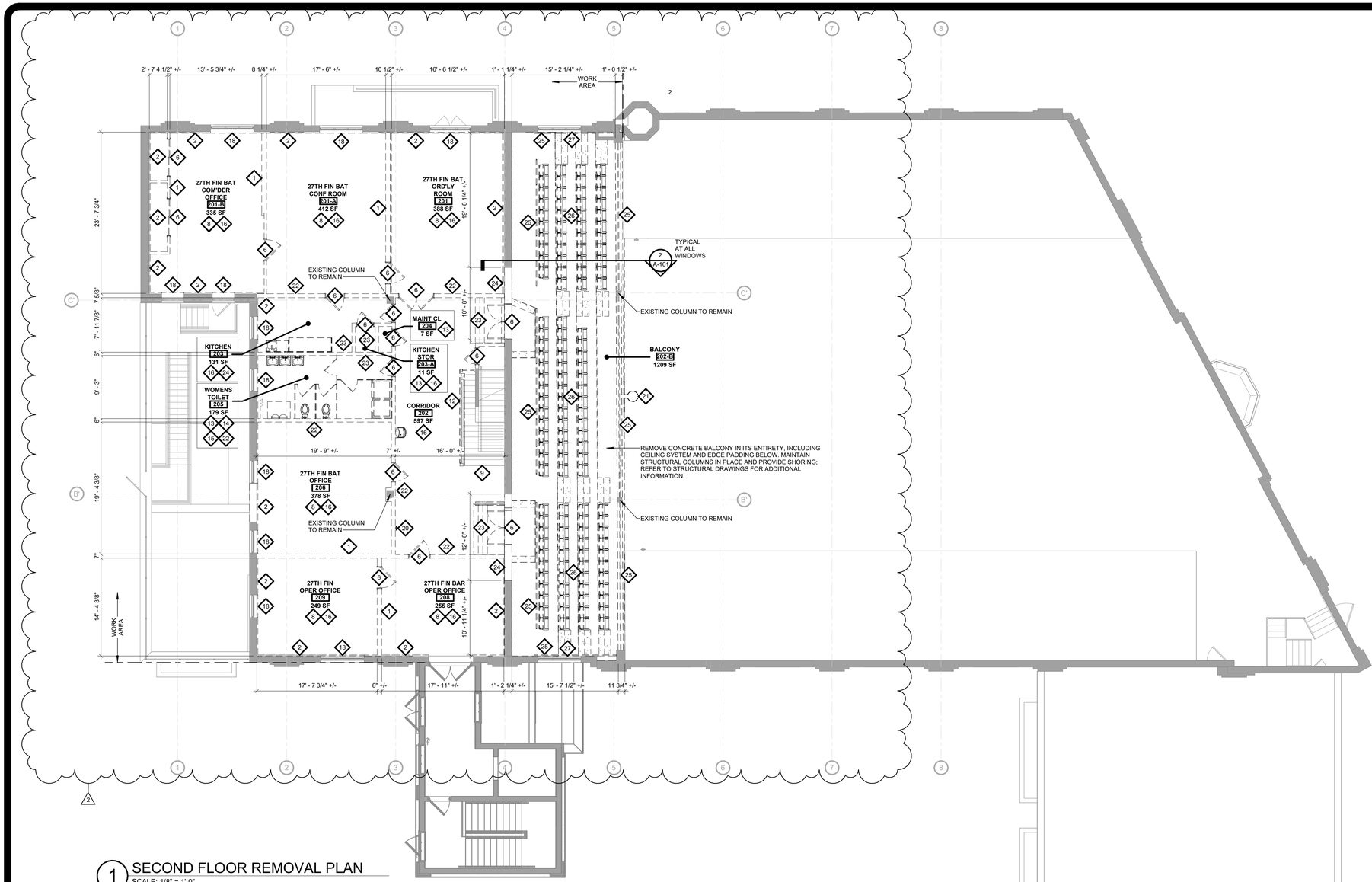
FIRST FLOOR AND PARTIAL BASEMENT REMOVAL PLANS

DRAWING NUMBER:

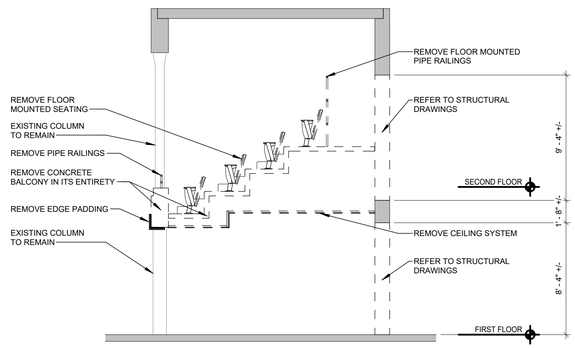
A-100

SHEET 18 OF 94

24 x 36



1 SECOND FLOOR REMOVAL PLAN
SCALE: 1/8" = 1'-0"



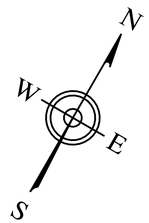
2 SECTION AT BALCONY REMOVAL
SCALE: 3/16" = 1'-0"

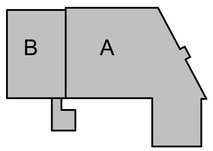
GENERAL NOTES:

1. COORDINATE WORK WITH (H) (P) AND (E) CONTRACTS, TYPICAL.
2. ALL EXISTING DIMENSIONS ARE PLUS OR MINUS. VERIFY IN FIELD ALL EXISTING CONDITIONS AND DIMENSIONS.
3. PRIOR TO MAKING ANY CONCRETE FLOOR SLAB PENETRATIONS,SCAN THE SLAB AREA USING A "REBAR LOCATING DEVICE" TO LOCATE ANY EXISTING REINFORCING STEEL, UTILITIES AND/OR OTHER ELEMENTS EMBEDDED WITHIN OR BELOW THE SURFACE OF THE SLAB.
4. ALL ARTWORK, FRAMED ITEMS AND TACKBOARDS TO BE REMOVED BY THE STATE.
5. COORDINATE REMOVALS OF EXISTING TERRAZZO AT NEW WALLS.
6. PREPARE EXISTING WINDOW TRIM AND SILLS FOR NEW PAINT FINISH PER MANUFACTURERS WRITTEN INSTRUCTIONS.
7. REMOVE ALL WINDOW TREATMENTS.
8. APPLIANCES TO BE REMOVED BY STATE.

REMOVAL KEY NOTES:

1. REMOVE STUD WALL WITH WOOD PANEL SURFACE.
2. REMOVE PANELING AND FURRING TO SUBSTRATE.
3. REMOVE WALL BASE.
4. REMOVE CARPET TILE.
5. WOOD FLOOR TO REMAIN-PREP FOR SCHEDULED FINISH.
6. REMOVE DOOR, FRAME AND THRESHOLD.
7. REMOVE WOOD FLOORING DOWN TO CONCRETE SLAB.
8. REMOVE WOOD TRIM.
9. REMOVE RUBBER TREADS.
10. REMOVE PAINT FINISH ON TERRAZZO WALL BASE.
11. REMOVE SPALLING PLASTER TO SUBSTRATE.
12. REMOVE RAILING COMPONENTS.
13. REMOVE CERAMIC WALL TILE, BASE AND WAINSCOT CAP.
14. REMOVE TERRAZZO FLOOR SYSTEM TO CONCRETE DECK.
15. REMOVE TOILET PARTITIONS AND ALL TOILET / BATH ACCESSORIES.
16. REMOVE VINYL TILE FLOOR SYSTEM TO CONCRETE SUBSTRATE. SCARIFY AND CLEAN ALL MASTIC FROM SURFACE. COORDINATE WITH HAZARDOUS MATERIALS ABATEMENT.
17. REMOVE CHAIR LIFT SYSTEM AND RAIL.
18. SEE DETAIL 2/A-100 FOR REMOVALS AT WINDOWS.
19. REMOVE DEFIBRILLATOR AND STORE FOR REINSTALLATION.
20. SALVAGE FIRE EXTINGGUISHER AND STORE FOR REINSTALLATION, TYPICAL.
21. SALVAGE BASKETBALL HOOP ASSEMBLY FOR REINSTALLATION; CLEAN AND STORE.
22. REMOVE STUD WALL WITH WOOD PANEL AND PLASTER SURFACES.
23. REMOVE STUD WALL WITH PLASTER SURFACE.
24. REMOVE MASONRY WALL WITH PLASTER SURFACE.
25. REMOVE RAISED SLAB AT URINALS.
26. REMOVE STEEL STAIR SYSTEM.
27. REMOVE ALL BASE CABINETS AND COUNTERTOP.
28. REMOVE FLOOR MOUNTED PIPE RAILINGS.
29. REMOVE FLOOR MOUNTED SEATING.
30. REMOVE WINDOW SILL AND APRON.





KEY PLAN

NEW YORK STATE | Office of General Services
DESIGN & CONSTRUCTION

CONSULTANT

CERTIFICATE OF AUTHORIZATION No.:

BCA ARCHITECTS ENGINEERS

BUILDING CODE COMPLIANCE:

COMPLIANCE STATEMENT:

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REGISTERED ARCHITECT TIMOTHY S. C OVERTON 03589 STATE OF NEW YORK

REGISTRATION EXPIRES: 03/31/2027

CONTRACT:

CONSTRUCTION

TITLE:

RENOVATE INTERIOR SPACES

LOCATION:

STATE ARMORY
150-74 6TH AVE,
WHITESTONE, NY.

CLIENT:

NEW YORK STATE DIVISION OF MILITARY AND NAVAL AFFAIRS

MARK	DATE	DESCRIPTION
	05/20/2025	BID DOCUMENTS
2	06/27/2025	ADDENDUM 02

PROJECT NUMBER:	47592 – C
DESIGNED BY:	TCO
DRAWN BY:	WTF
FIELD CHECK:	
APPROVED:	

SHEET TITLE:

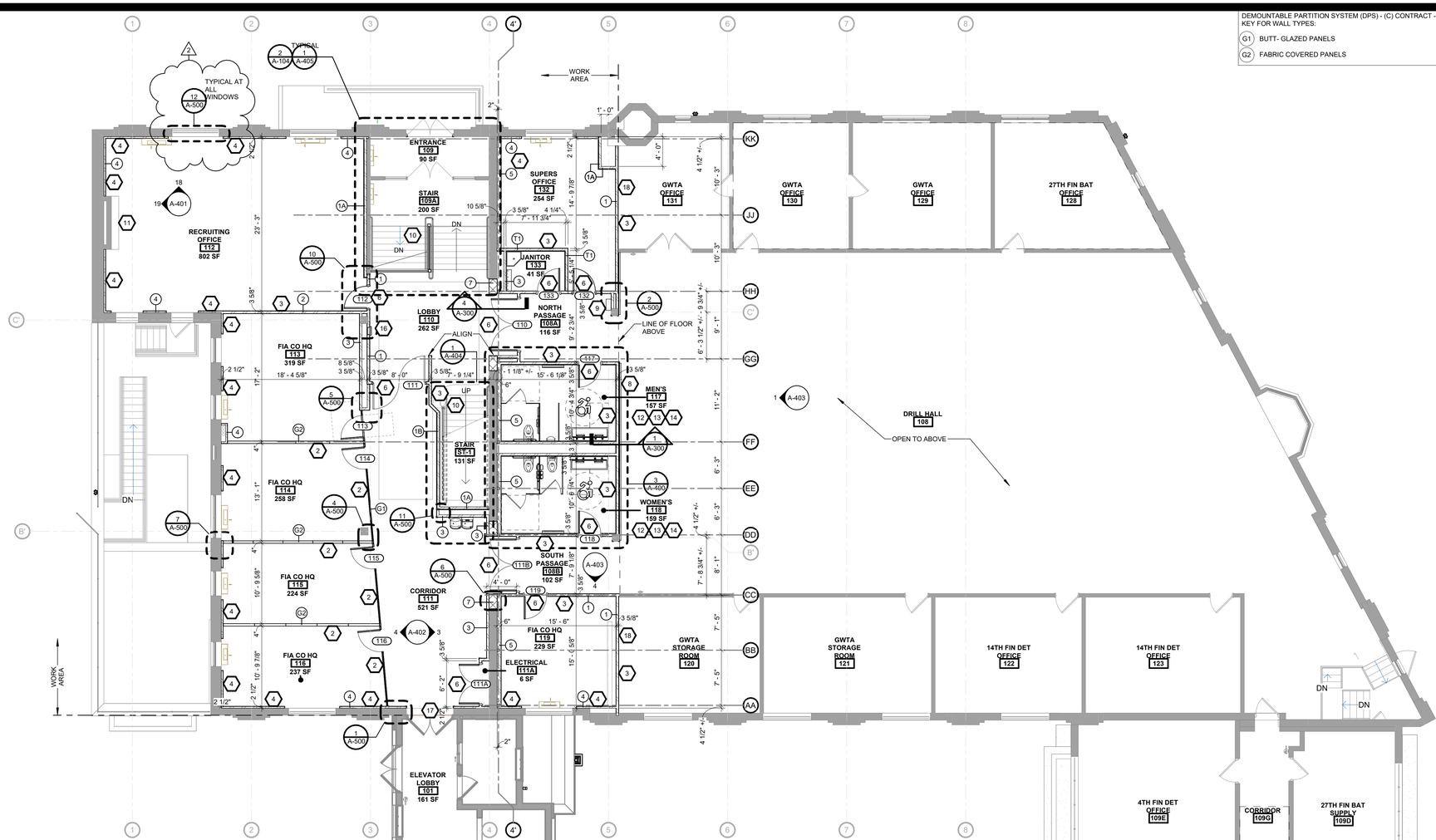
SECOND FLOOR REMOVAL PLAN

DRAWING NUMBER:

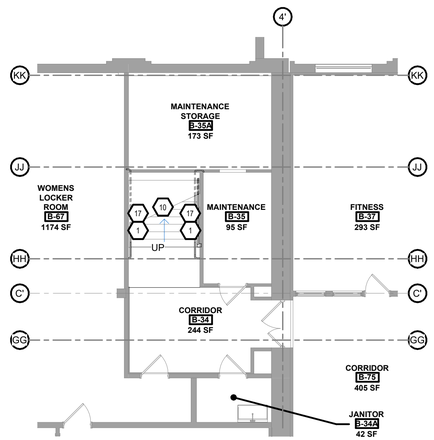
A-101

SHEET 19 OF 94

24 x 36



1 FIRST FLOOR PLAN
SCALE: 1/8" = 1'-0"



2 PARTIAL BASEMENT FLOOR PLAN
SCALE: 1/8" = 1'-0"

DEMOUNTABLE PARTITION SYSTEM (DPS) - (C) CONTRACT - ALTERNATE 2
KEY FOR WALL TYPES:

- G1 BUTT- GLAZED PANELS
- G2 FABRIC COVERED PANELS

GENERAL NOTES

1. COORDINATE WORK WITH (H) (P) AND (E) CONTRACTS, TYPICAL.
2. ALL EXISTING DIMENSIONS ARE PLUS OR MINUS. VERIFY IN FIELD ALL EXISTING CONDITIONS AND DIMENSIONS.

KEY NOTES:

1. PROVIDE WALL PATCHING.
2. (C) CONTRACT - ALTERNATE 2: PROVIDE DEMOUNTABLE PANEL SYSTEM.
3. PROVIDE STUD WALL SYSTEM.
4. PROVIDE FURRING WALL SYSTEM.
5. PROVIDE MASONRY WALL.
6. PROVIDE DOOR AND FRAME.
7. PROVIDE WOOD SILL AND APRON.
8. PROVIDE WALL PADS.
9. REINSTALL DEFIBRILLATOR.
10. PROVIDE STAIR COMPONENTS.
11. PROVIDE WOOD MANTLE.
12. (P) CONTRACT TO PROVIDE WATER CLOSET, URINAL AND CONNECTIONS. COORDINATE WITH (P) CONTRACT.
13. (P) CONTRACT TO PROVIDE LAVATORY UNIT AND CONNECTIONS. COORDINATE WITH (P) AND (E) CONTRACTS.
14. PROVIDE TOILET PARTITIONS.
15. STATE TO PROVIDE UNDERCOUNTER REFRIGERATOR.
16. PROVIDE FIRE EXTINGUISHER AND CABINET.
17. PAINT AS SCHEDULED
18. PROVIDE PLASTER CEILING.

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REGISTERED ARCHITECT TRAVIS C OVERTON 03589 STATE OF NEW YORK

REGISTRATION EXPIRES: 03/31/2027

NEW YORK STATE Office of General Services
DESIGN & CONSTRUCTION

CONSULTANT

CERTIFICATE OF AUTHORIZATION No.:

BCA ARCHITECTS ENGINEERS

CONTRACT:
CONSTRUCTION

TITLE:
RENOVATE INTERIOR SPACES

LOCATION:
STATE ARMORY
150-74 6TH AVE,
WHITESTONE, NY.

CLIENT:
NEW YORK STATE DIVISION OF MILITARY AND NAVAL AFFAIRS

MARK	DATE	DESCRIPTION
2	06/27/2025	ADDENDUM 02
	05/20/2025	BID DOCUMENTS

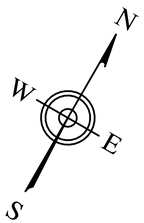
PROJECT NUMBER: 47592 – C

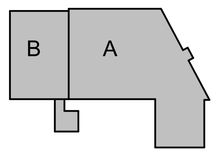
DESIGNED BY: TCO
DRAWN BY: WTF
FIELD CHECK:
APPROVED:

SHEET TITLE:
FIRST FLOOR AND PARTIAL BASEMENT FLOOR PLANS

DRAWING NUMBER:
A-104

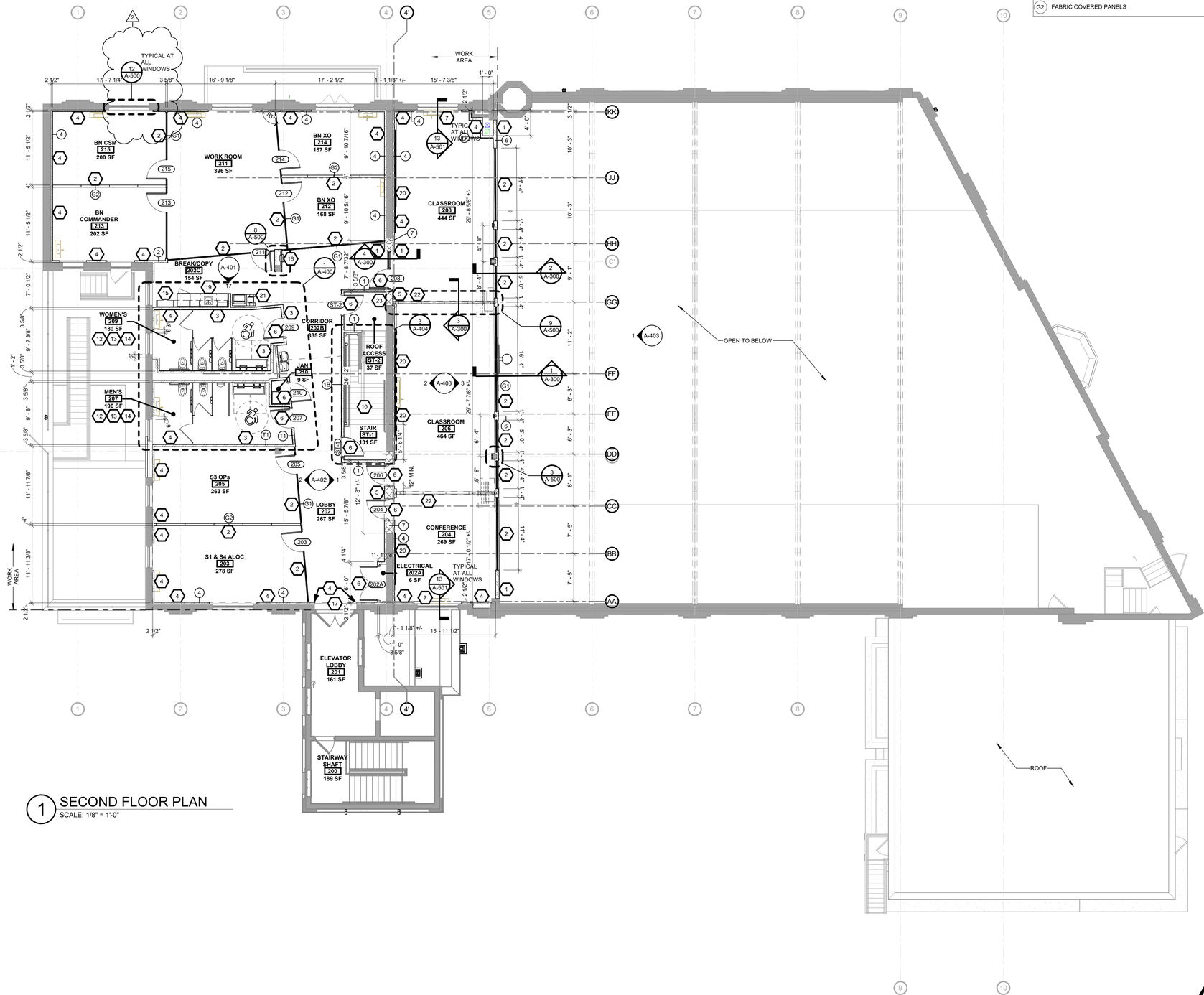
SHEET 22 OF 94





KEY PLAN

24 x 36



1 SECOND FLOOR PLAN
SCALE: 1/8" = 1'-0"

DEMOUNTABLE PARTITION SYSTEM (DPS) - (C) CONTRACT - ALTERNATE 2
KEY FOR WALL TYPES:

- G1 BUTT- GLAZED PANELS
- G2 FABRIC COVERED PANELS

GENERAL NOTES:

1. COORDINATE WORK WITH (H) (P) AND (E) CONTRACTS, TYPICAL.
2. ALL EXISTING DIMENSIONS ARE PLUS OR MINUS. VERIFY IN FIELD ALL EXISTING CONDITIONS AND DIMENSIONS.

KEY NOTES:

1. PROVIDE WALL PATCHING.
2. (C) CONTRACT - ALTERNATE 2: PROVIDE DEMOUNTABLE PARTITION SYSTEM.
3. PROVIDE STUD WALL.
4. PROVIDE FURRING WALL
5. PROVIDE MASONRY WALL.
6. PROVIDE DOOR AND FRAME.
7. PROVIDE WOOD SILL AND APRON.
8. PROVIDE WALL PADS.
9. REINSTALL DEFIBRILLATOR.
10. PROVIDE STAIR COMPONENTS.
11. PROVIDE WOOD MANTLE.
12. (P) CONTRACT TO PROVIDE WATER CLOSET, URINAL AND CONNECTIONS. COORDINATE WITH (P) CONTRACT.
13. (P) CONTRACT TO PROVIDE LAVATORY UNIT AND CONNECTIONS. COORDINATE WITH (P) AND (E) CONTRACTS.
14. PROVIDE TOILET PARTITIONS.
15. STATE TO PROVIDE UNDERCOUNTER REFRIGERATOR.
16. PROVIDE FIRE EXTINGUISHER AND CABINET.
17. NOT USED.
18. PROVIDE PLASTER CEILING.
19. PROVIDE CABINETS AND COUNTERTOPS.
20. PROVIDE WHITE BOARD.
21. STATE TO PROVIDE PRINTER.
22. PROVIDE FOLDING PANEL PARTITION.
23. PROVIDE TYPE 'X' GYPSUM BOARD ON CMU FLUSH WITH ADJACENT EXISTING SURFACE

BUILDING CODE COMPLIANCE:

COMPLIANCE STATEMENT:

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REGISTERED ARCHITECT TIMOTHY S. C. OVERTON 036891 STATE OF NEW YORK

REGISTRATION EXPIRES: 03/31/2027

NEW YORK STATE Office of General Services
DESIGN & CONSTRUCTION

CONSULTANT

CERTIFICATE OF AUTHORIZATION No.:

BCA ARCHITECTS ENGINEERS

CONTRACT:
CONSTRUCTION

TITLE:
RENOVATE INTERIOR SPACES

LOCATION:
STATE ARMORY
150-74 6TH AVE,
WHITESTONE, NY.

CLIENT:
NEW YORK STATE DIVISION OF MILITARY AND NAVAL AFFAIRS

MARK	DATE	DESCRIPTION
	05/20/2025	BID DOCUMENTS
2	06/27/2025	ADDENDUM 02

PROJECT NUMBER:	47592 – C
DESIGNED BY:	TCO
DRAWN BY:	WTF
FIELD CHECK:	
APPROVED:	

SHEET TITLE:
SECOND FLOOR PLAN

DRAWING NUMBER:
A-105

SHEET 23 OF 94

KEY PLAN

24 x 36

GENERAL NOTES:

1. ALL WINDOWS IN WORK AREA TO RECIEVE WINDOW ROLLER SHADES (WRS).

MATERIALS LEGEND:

	CPT-1	CARPET TILE
	CPT-2	CARPET TILE
	ETZ	EPOXY TERRAZZO
	PRT-1	PORCELAIN TILE
	LVT-1	LUXURY VINYL TILE
	LVT-2	LUXURY VINYL TILE
	VCT-1	VINYL COMPOSITION TILE
	RST-1	RUBBER STAIR TREAD OVER EXISTING TERRAZZO TREAD
		EXISTING TERRAZZO TREADS- FOLLOW TERRAZZO RESTORATION SPECIFICATION

FINISH ABBREVIATIONS:

AP	ACOUSTICAL PANEL
ATC	ACOUSTICAL TILE CEILING
CG	CORNER GUARD
CPT	CARPET TILE
DPS	DEMOUNTABLE PARTITION SYSTEM
ECT	ENTRY CARPET TILE
EB	EDGE BANDING
ETB	EPOXY TERRAZZO BASE
ETZ	EPOXY TERRAZZO
FPD	FOLDING PANEL DOOR
FRP	FIBERGLASS REINFORCED PANELS
GYP	GYPSUM BOARD
GWP	GYPSUM WALL PADS
IAL	INTERIOR ACRYLIC LATEX
LVT	LUXURY VINYL TILE
MAR	MARBLE THRESHOLD
PL	PLASTIC LAMINATE
PWC	PROTECTIVE WALL COVERING
PFT	PORCELAIN FLOOR TILE
PTB	PORCELAIN TILE BASE
PWT	PORCELAIN WALL TILE
RB	RESILIENT BASE
RST	RUBBER STAIR TREADS
SSM	SOLID SURFACE MATERIAL
TBD	TO BE DETERMINED
TPS	TOILET PARTITION SYSTEM
TS	TRANSITION STRIP
VCT	VINYL COMPOSITION TILE
WP	WALL PROTECTION
WRS	WINDOW SHADES

ENTRANCE 109 90 SF
RECRUITING OFFICE 112 802 SF
STAIR 109A 200 SF
SUPERS OFFICE 132 284 SF
JANITOR 133 41 SF
LOBBY 110 262 SF
NORTH PASSAGE 108A 116 SF
FIA CO HQ 113 319 SF
MEN'S 117 157 SF
STAIR 131 131 SF
WOMEN'S 118 159 SF
SOUTH PASSAGE 108B 102 SF
CORRIDOR 111 821 SF
FIA CO HQ 115 224 SF
FIA CO HQ 116 237 SF
FIA CO HQ 119 229 SF
ELECTRICAL 111A 6 SF
ELEVATOR LOBBY 101 161 SF NO WORK
ROOM 102 84 SF NO WORK
STAIRWAY SHAFT 100 189 SF
GWTA OFFICE 131 238 SF
GWTA OFFICE 130 264 SF
GWTA OFFICE 129 315 SF
27TH FIN BAT OFFICE 128 324 SF
GWTA STORAGE ROOM 120 295 SF
GWTA STORAGE ROOM 121 351 SF NO WORK
14TH FIN DET OFFICE 122 307 SF NO WORK
14TH FIN DET OFFICE 123 325 SF NO WORK
4TH FIN DET OFFICE 109E NO WORK
CORRIDOR 109C
27TH FIN BAT SUPPLY 109D NO WORK
7TH FIN DET OFFICE 109C NO WORK
7TH FIN DET OFFICE 109F NO WORK
4TH FIN DET OFFICE 109B NO WORK

EXISTING TERRAZZO RESTORED
EPOXY TERRAZZO INFILL
EXISTING TERRAZZO
EPOXY TERRAZZO
NEW EPOXY TERRAZZO
CONTINUE FINISH TO EXPANSION JOINT/DOOR THRESHOLD
LINE OF FLOOR ABOVE
IAL-2 ABOVE TILE- ALL WALLS
OPEN TO ABOVE
NO WORK

1 FIRST FLOOR FINISH PLAN
SCALE: 1/8" = 1'-0"

KEY PLAN

NEW YORK STATE | Office of General Services
DESIGN & CONSTRUCTION

CONSULTANT

CERTIFICATE OF AUTHORIZATION No.:

BCA ARCHITECTS ENGINEERS

BUILDING CODE COMPLIANCE:

COMPLIANCE STATEMENT:

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ENERGY CODE COMPLIANCE:

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REGISTERED ARCHITECT TIMOTHY S. C. OVERTON 036891 STATE OF NEW YORK

REGISTRATION EXPIRES: 03/31/2027

CONTRACT:

CONSTRUCTION

TITLE:

RENOVATE INTERIOR SPACES

LOCATION:

STATE ARMORY
150-74 6TH AVE,
WHITESTONE, NY.

CLIENT:

NEW YORK STATE DIVISION OF MILITARY AND NAVAL AFFAIRS

MARK	DATE	DESCRIPTION
2	06/27/2025	ADDENDUM 02
	05/20/2025	BID DOCUMENTS

PROJECT NUMBER:	47592 – C
DESIGNED BY:	TCO
DRAWN BY:	LEW
FIELD CHECK:	
APPROVED:	

SHEET TITLE:

FIRST FLOOR FINISH PLAN

DRAWING NUMBER:

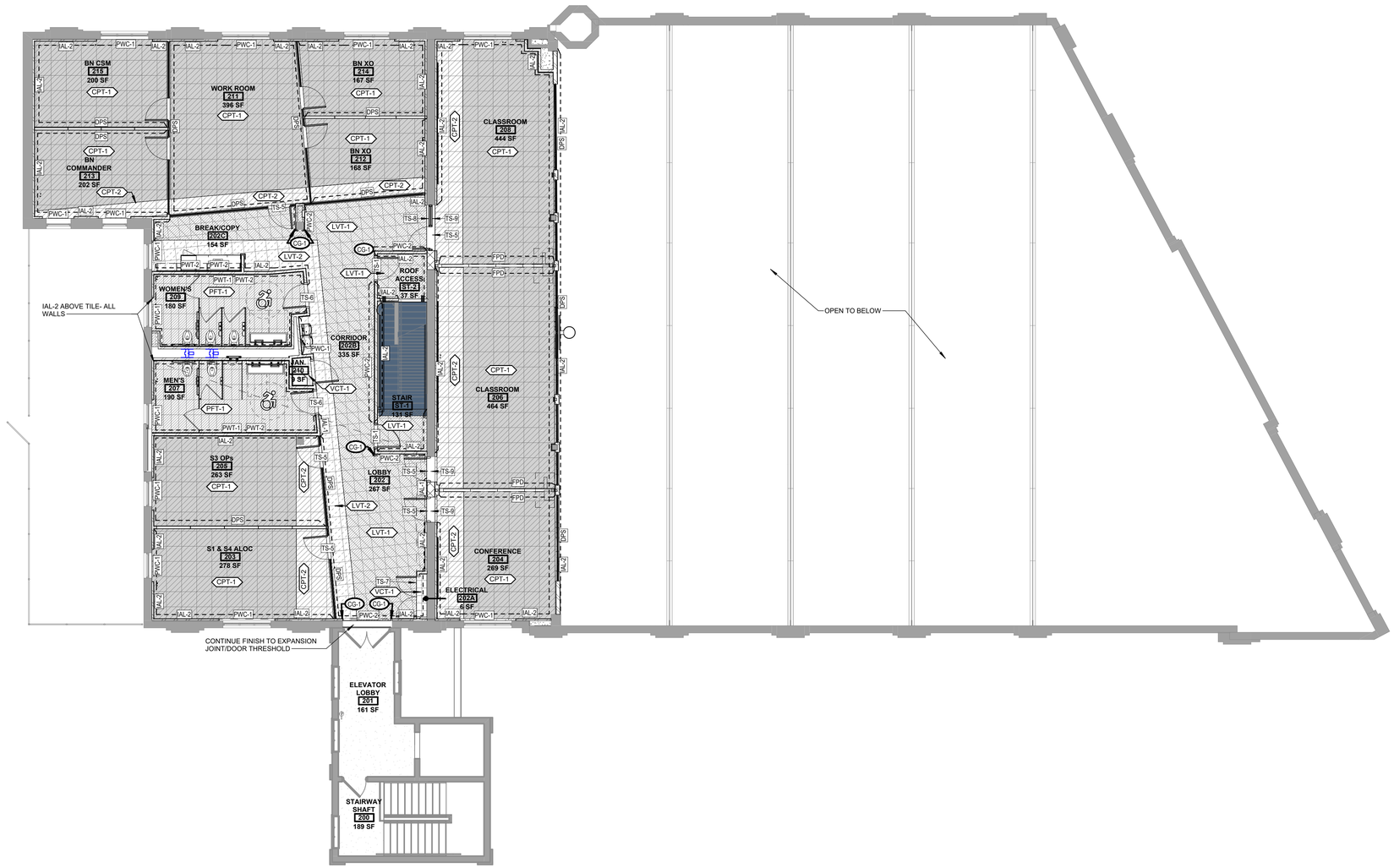
A-106

SHEET 24 OF 94

24 x 36

GENERAL NOTES:

1. ALL WINDOWS IN WORK AREA TO RECIEVE WINDOW ROLLER SHADES (WRS).



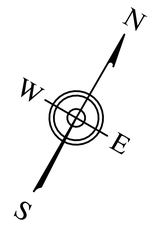
1 SECOND FLOOR FINISH PLAN
SCALE: 1/8" = 1'-0"

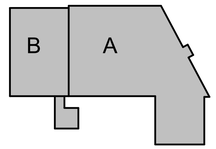
MATERIALS LEGEND:

	CPT-1	CARPET TILE
	CPT-2	CARPET TILE
	ETZ-EPOXY TERRAZZO	
	PRT-1	PORCELAIN TILE
	LVT-1	LUXURY VINYL TILE
	LVT-2	LUXURY VINYL TILE
	VCT-1	VINYL COMPOSITION TILE
	RST-1	RUBBER STAIR TREAD OVER EXISTING TERRAZZO TREAD

FINISH ABBREVIATIONS:

AP	ACOUSTICAL PANEL
ATC	ACOUSTICAL TILE CEILING
CG	CORNER GUARD
CPT	CARPET TILE
DPS	DEMOUNTABLE PARTITION SYSTEM
ECT	ENTRY CARPET TILE
EB	EDGE BANDING
ETB	EPOXY TERRAZZO BASE
ETZ	EPOXY TERRAZZO
FPD	FOLDING PANEL DOOR
FRP	FIBERGLASS REINFORCED PANELS
GYP	GYPSUM BOARD
GWP	GYPSUM WALL PADS
IAL	INTERIOR ACRYLIC LATEX
LVT	LUXURY VINYL TILE
MAR	MARBLE THRESHOLD
PL	PLASTIC LAMINATE
PWC	PROTECTIVE WALL COVERING
PFT	PORCELAIN FLOOR TILE
PTB	PORCELAIN TILE BASE
PWT	PORCELAIN WALL TILE
RB	RESILIENT BASE
RST	RUBBER STAIR TREADS
SSM	SOLID SURFACE MATERIAL
TBD	TO BE DETERMINED
TPS	TOILET PARTITION SYSTEM
TS	TRANSITION STRIP
VCT	VINYL COMPOSITION TILE
WP	WALL PROTECTION
WRS	WINDOW SHADES





KEY PLAN

NEW YORK STATE | Office of General Services
DESIGN & CONSTRUCTION

CONSULTANT

CERTIFICATE OF AUTHORIZATION No.:

BCA ARCHITECTS ENGINEERS

BUILDING CODE COMPLIANCE:

COMPLIANCE STATEMENT:

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REGISTERED ARCHITECT TRAVIS C OVERTON 03589 STATE OF NEW YORK

REGISTRATION EXPIRES: 03/31/2027

CONTRACT:

CONSTRUCTION

TITLE:

RENOVATE INTERIOR SPACES

LOCATION:

STATE ARMORY
150-74 6TH AVE,
WHITESTONE, NY.

CLIENT:

NEW YORK STATE DIVISION OF MILITARY AND NAVAL AFFAIRS

MARK	DATE	DESCRIPTION
2	06/27/2025	ADDENDUM 02
	05/20/2025	BID DOCUMENTS

PROJECT NUMBER:	47592 – C
DESIGNED BY:	TCO
DRAWN BY:	LEW
FIELD CHECK:	
APPROVED:	

SHEET TITLE:

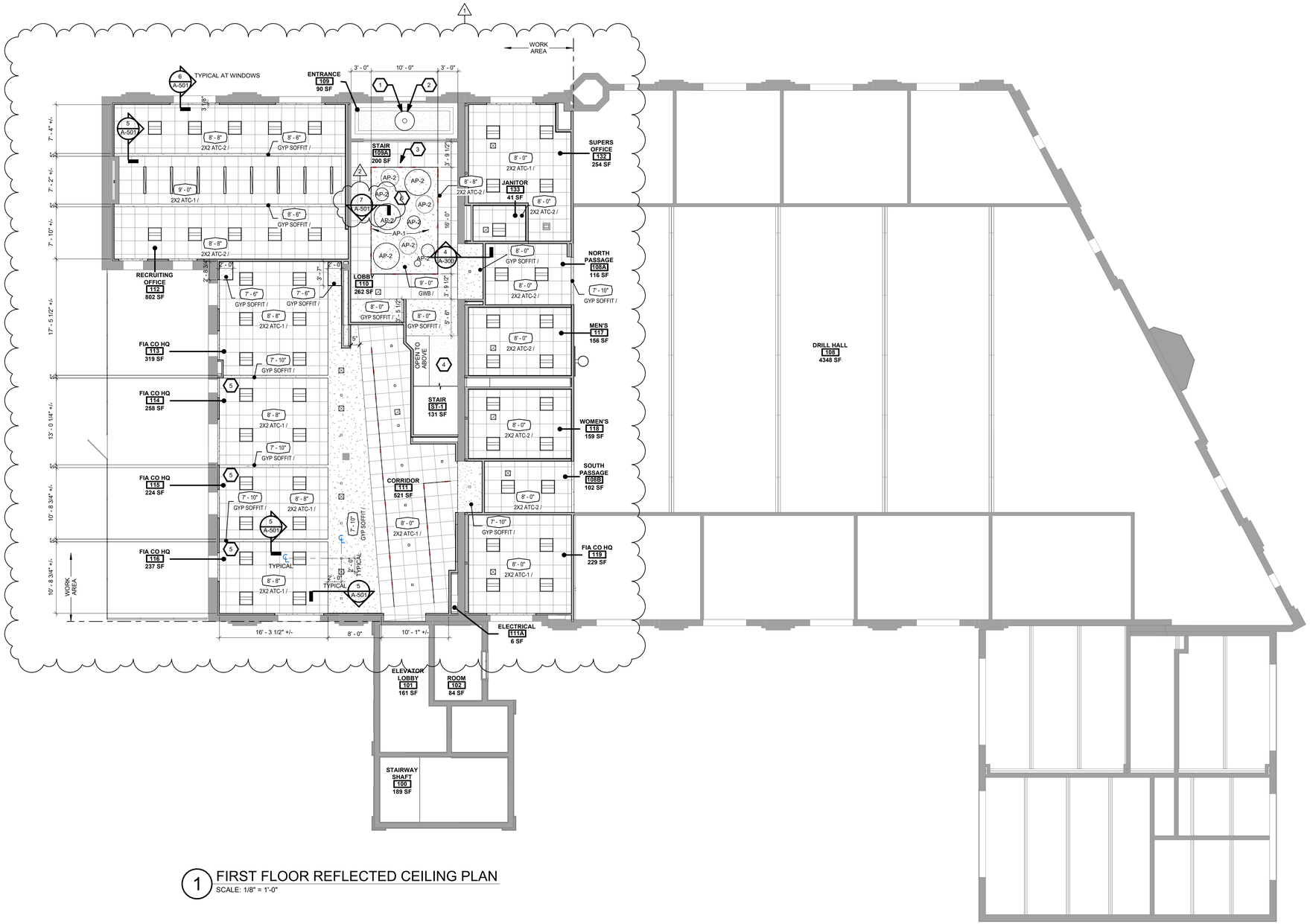
SECOND FLOOR FINISH PLAN

DRAWING NUMBER:

A-107

SHEET 25 OF 94

24 x 36



1 FIRST FLOOR REFLECTED CEILING PLAN
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

1. COORDINATE WORK WITH (H), (P), AND (E) CONTRACTS, TYPICAL.
2. ALL EXISTING DIMENSIONS ARE PLUS OR MINUS. VERIFY IN FIELD ALL EXISTING CONDITIONS AND DIMENSIONS.

KEY NOTES:

1. PENDANT FIXTURE.
2. EXISTING CEILING TO REMAIN.
3. PERIMETER COVE LIGHTING.
4. EXISTING PLASTER SLOPED CEILING TO REMAIN.
5. SOFFIT FOR DEMOUNTABLE WALL SYSTEM ATTACHMENT.
6. ACOUSTICAL FELT SHAPES ATTACHED TO FELT PANEL.

SYMBOLS LEGEND:

- 9' - 0" — DESIGNATES BOTTOM OF CEILING ABOVE FINISH FLOOR.
- ACT 2 / — DESIGNATES CEILING FINISH MATERIAL
- 2 x 2 TROFFER
- RECESSED LED LIGHT STRIP
- ENTRY PENDANT FIXTURE
- SQUARE RECESSED LED WAFER
- GRID MOUNTED LED STRIP
- SUPPLY DIFFUSER
- EXHAUST GRILLE

CEILING TYPE LEGEND:

- SUSPENDED GYPSUM BOARD CEILING SYSTEM
- ACOUSTIC PANEL CEILING
- EXISTING PLASTER CEILING

NEW YORK STATE | Office of General Services
DESIGN & CONSTRUCTION

CONSULTANT

CERTIFICATE OF AUTHORIZATION No.:

BCA ARCHITECTS ENGINEERS

BUILDING CODE COMPLIANCE:

COMPLIANCE STATEMENT:

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REGISTERED ARCHITECT — IRWIN S. C. OVERTON — 036891 — STATE OF NEW YORK

REGISTRATION EXPIRES: 03/31/2027

CONTRACT:

CONSTRUCTION

TITLE:

RENOVATE INTERIOR SPACES

LOCATION:

STATE ARMORY
150-74 6TH AVE,
WHITESTONE, NY.

CLIENT:

NEW YORK STATE DIVISION OF MILITARY AND NAVAL AFFAIRS

MARK	DATE	DESCRIPTION
2	06/27/2025	ADDENDUM 02
1	06/13/2025	ADDENDUM 01
	05/20/2025	BID DOCUMENTS

PROJECT NUMBER:	47592 – C
DESIGNED BY:	TCO
DRAWN BY:	LEW
FIELD CHECK:	
APPROVED:	

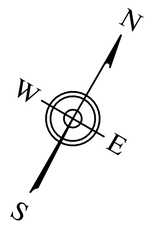
SHEET TITLE:

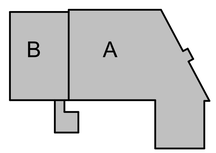
FIRST FLOOR REFLECTED CEILING PLAN

DRAWING NUMBER:

A-108

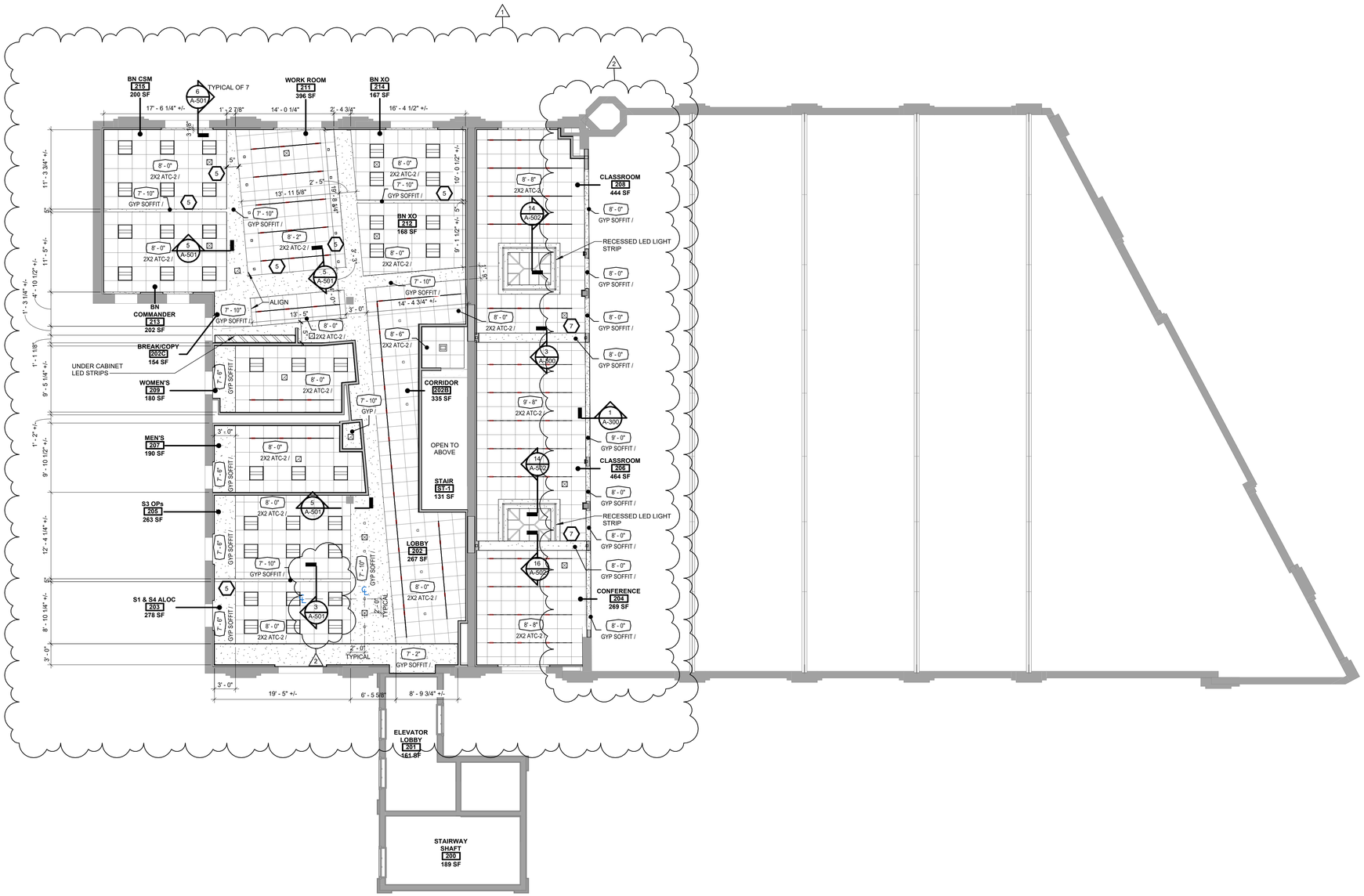
SHEET 26 OF 94





KEY PLAN

24 x 36



1 SECOND FLOOR REFLECTED CEILING PLAN

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

GENERAL NOTES:

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KEY NOTES:

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2. EXISTING CEILING TO REMAIN.
3. PERIMETER COVE LIGHTING.
4. EXISTING PLASTER SLOPED CEILING TO REMAIN.
5. SOFFIT FOR DEMOUNTABLE WALL SYSTEM ATTACHMENT.
6. ACOUSTICAL FELT SHAPES ATTACHED TO FELT PANEL.
7. SOFFIT FOR DEMOUNTABLE PANEL SYSTEM.

SYMBOLS LEGEND:

- 9' - 0" — DESIGNATES BOTTOM OF CEILING ABOVE FINISH FLOOR.
- ACT 2 / — DESIGNATES CEILING FINISH MATERIAL
- 2 x 2 TROFFER
- RECESSED LED LIGHT STRIP
- ENTRY PENDANT FIXTURE
- SQUARE RECESSED LED WAFER
- GRID MOUNTED LED STRIP
- SUPPLY DIFFUSER
- EXHAUST GRILLE

CEILING TYPE LEGEND:

- SUSPENDED GYPSUM BOARD CEILING SYSTEM
- ACOUSTIC PANEL CEILING
- EXISTING PLASTER CEILING

N

W E

S

B A

KEY PLAN

24 x 36

NEW YORK STATE | Office of General Services

DESIGN & CONSTRUCTION

CONSULTANT

CERTIFICATE OF AUTHORIZATION No.:

BCA ARCHITECTS ENGINEERS

BUILDING CODE COMPLIANCE:

COMPLIANCE STATEMENT:

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REGISTERED ARCHITECT — THAN S. C. OVERTON — 03589 — STATE OF NEW YORK

REGISTRATION EXPIRES: 03/31/2027

CONTRACT:

CONSTRUCTION

TITLE:

RENOVATE INTERIOR SPACES

LOCATION:

STATE ARMORY
150-74 6TH AVE,
WHITESTONE, NY.

CLIENT:

NEW YORK STATE DIVISION OF MILITARY AND NAVAL AFFAIRS

MARK	DATE	DESCRIPTION
2	06/27/2025	ADDENDUM 02
1	06/13/2025	ADDENDUM 01
	05/20/2025	BID DOCUMENTS

PROJECT NUMBER:	47592 – C
DESIGNED BY:	TCO
DRAWN BY:	LEW, WTF
FIELD CHECK:	
APPROVED:	

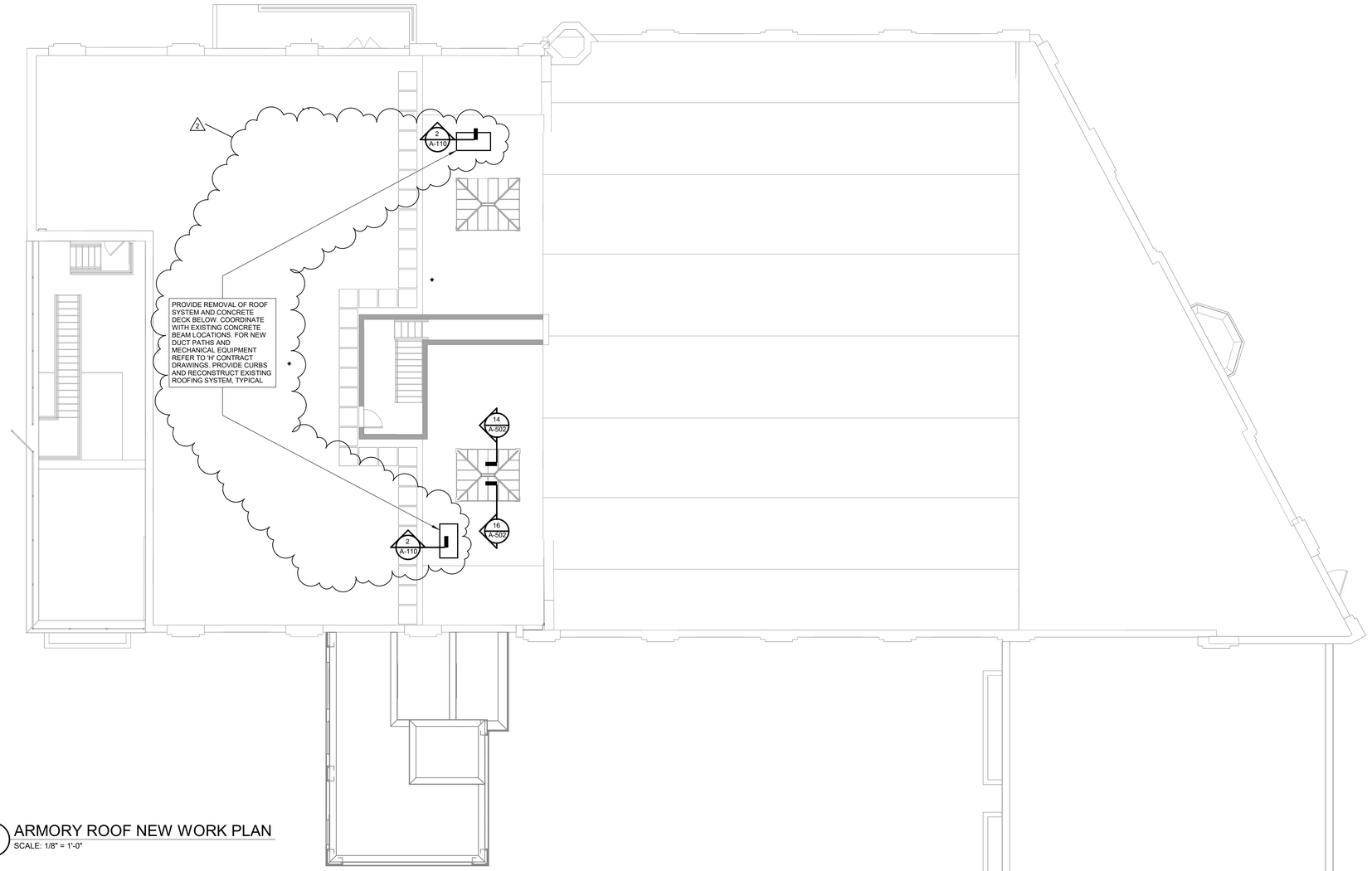
SHEET TITLE:

SECOND FLOOR REFLECTED CEILING PLAN

DRAWING NUMBER:

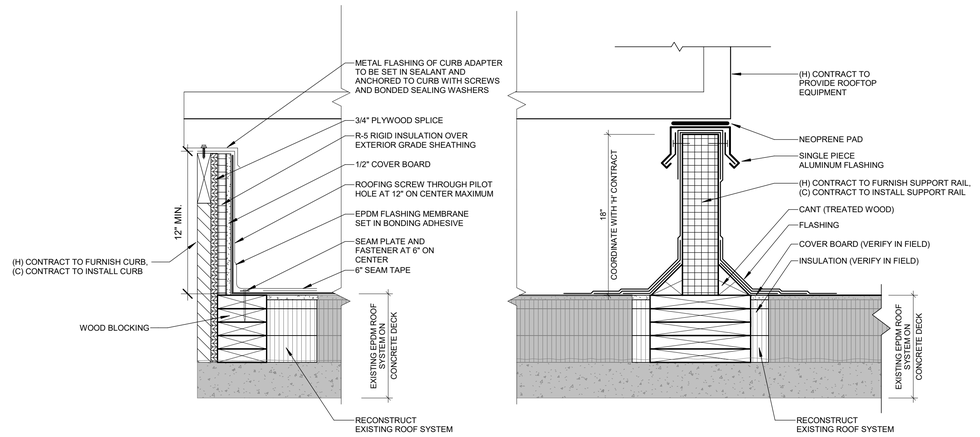
A-109

SHEET 27 OF 94



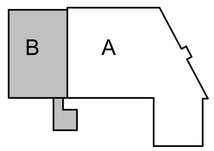
1 ARMORY ROOF NEW WORK PLAN

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



2 EQUIPMENT RAIL AND DUCT PENETRATION CURB

SCALE: 1 1/2" = 1'-0"



KEY PLAN

24 x 36

NEW YORK STATE | Office of General Services

DESIGN & CONSTRUCTION

CONSULTANT

CERTIFICATE OF AUTHORIZATION No.:

BCA ARCHITECTS ENGINEERS

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REGISTRATION EXPIRES: 03/31/2027

CONTRACT:

CONSTRUCTION

TITLE:

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LOCATION:

STATE ARMORY
150-74 6TH AVE,
WHITESTONE, NY.

CLIENT:

NEW YORK STATE DIVISION OF MILITARY AND NAVAL AFFAIRS

MARK	DATE	DESCRIPTION
2	06/27/2025	ADDENDUM 02
	05/20/2025	BID DOCUMENTS

PROJECT NUMBER:	47592 – C
DESIGNED BY:	TCO
DRAWN BY:	WTF
FIELD CHECK:	
APPROVED:	

SHEET TITLE:

ROOF PLAN AND DETAILS

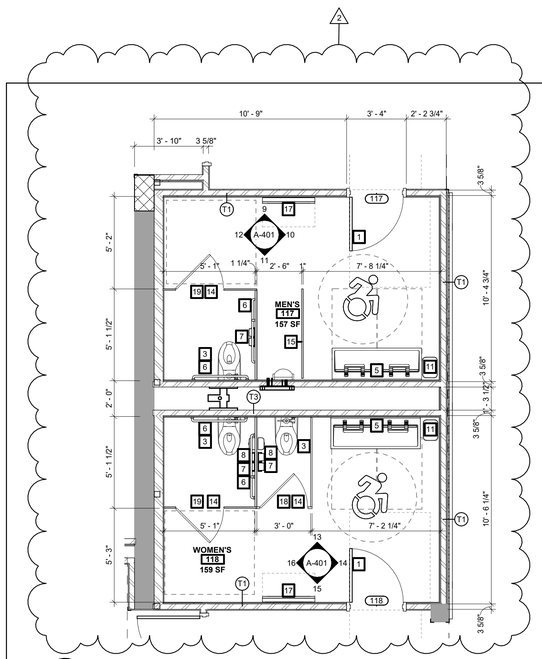
DRAWING NUMBER:

A-110

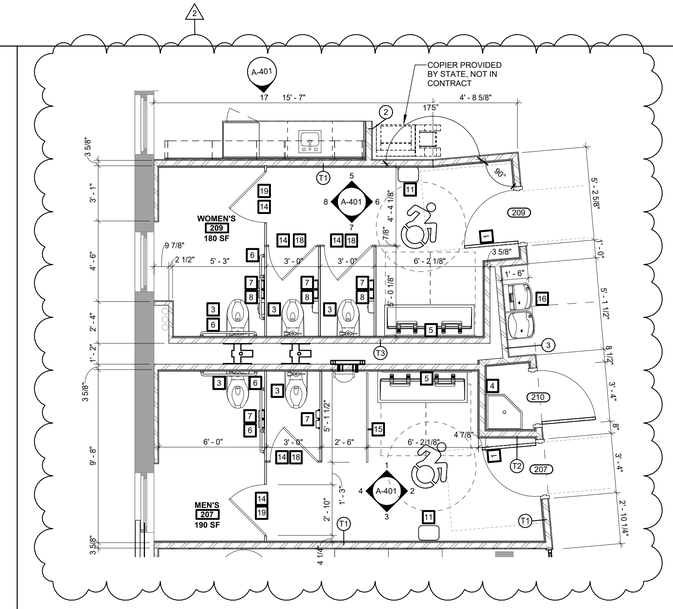
SHEET 28 OF 94

TOILET ROOM KEYNOTES

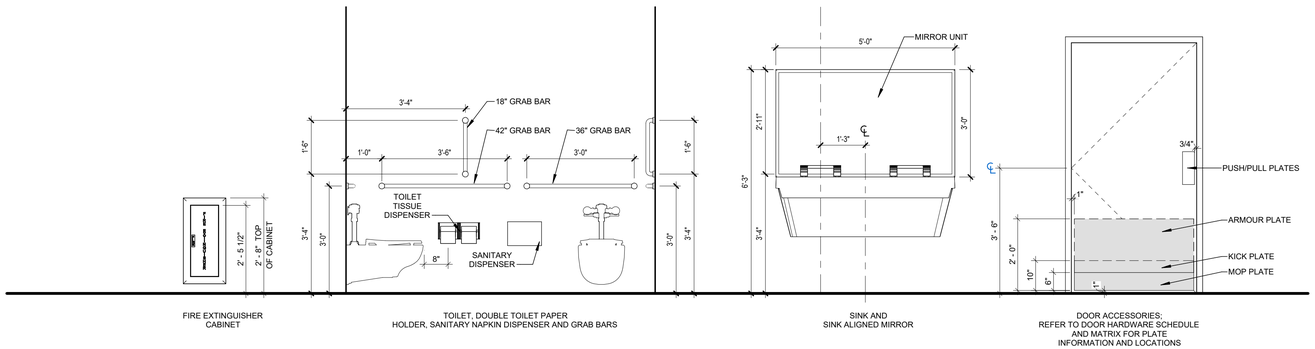
1. PROVIDE DOOR AND FRAME.
2. PROVIDE PAINT FINISH SYSTEM. PREPARE PER MANUFACTURER'S WRITTEN RECOMMENDATIONS. REFER TO FINISH SCHEDULE.
3. P-CONTRACT TO PROVIDE LAVATORY
4. PROVIDE MOP AND BROOM HOLDER.
5. PROVIDE MIRROR.
6. PROVIDE GRAB BARS.
7. PROVIDE TOILET PAPER DISPENSER.
8. PROVIDE SANITARY NAPKIN DISPENSER.
9. PROVIDE PORCELAIN WALL FIELD TILE. PREPARE PER MANUFACTURER'S RECOMMENDATIONS. REFER TO FINISH SCHEDULE.
10. PROVIDE PORCELAIN MOSAIC WALL TILE. PREPARE PER MANUFACTURER'S RECOMMENDATIONS. REFER TO FINISH SCHEDULE.
11. WASTE RECEPTACLE PROVIDED BY THE STATE.
12. PROVIDE PORCELAIN BASE TILE. PREPARE PER MANUFACTURER'S RECOMMENDATIONS. REFER TO FINISH SCHEDULE.
13. PROVIDE PORCELAIN FLOOR TILE. PREPARE PER MANUFACTURER'S RECOMMENDATIONS. REFER TO FINISH SCHEDULE.
14. PROVIDE TOILET PARTITIONS-OVERHEAD BRACING.
15. PROVIDE URINAL SCREEN WITH POST.
16. PROVIDE DRINKING FOUNTAIN
17. PROVIDE BABY CHANGING STATION
18. 32" CLEAR OPENING WIDTH AT TOILET PARTITION DOOR
19. 34" CLEAR OPENING WIDTH AT TOILET PARTITION DOOR



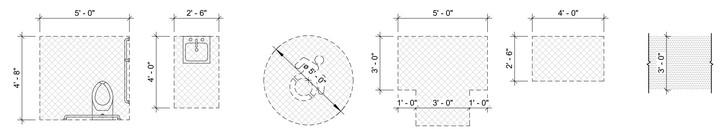
3 ENLARGED PLAN - FIRST FLOOR TOILET ROOMS
SCALE: 1/4" = 1'-0"



1 ENLARGED PLAN - SECOND FLOOR TOILET ROOMS
SCALE: 1/4" = 1'-0"



4 TYPICAL MOUNTING HEIGHTS
SCALE: 1/2" = 1'-0"



2 ADA TYPICAL CLEARANCE TYPES
SCALE: 1/4" = 1'-0"

24 x 36

NEW YORK STATE | Office of General Services
DESIGN & CONSTRUCTION

CONSULTANT

CERTIFICATE OF AUTHORIZATION No.:

BCA ARCHITECTS ENGINEERS

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REGISTERED ARCHITECT TRAVIS C OVERTON 035891 STATE OF NEW YORK

REGISTRATION EXPIRES: 03/31/2027

CONTRACT:

CONSTRUCTION

TITLE:

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LOCATION:

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MARK	DATE	DESCRIPTION
2	06/27/2025	ADDENDUM 02
	05/20/2025	BID DOCUMENTS

PROJECT NUMBER:	47592 – C
DESIGNED BY:	TCO
DRAWN BY:	LEW, WTF
FIELD CHECK:	
APPROVED:	

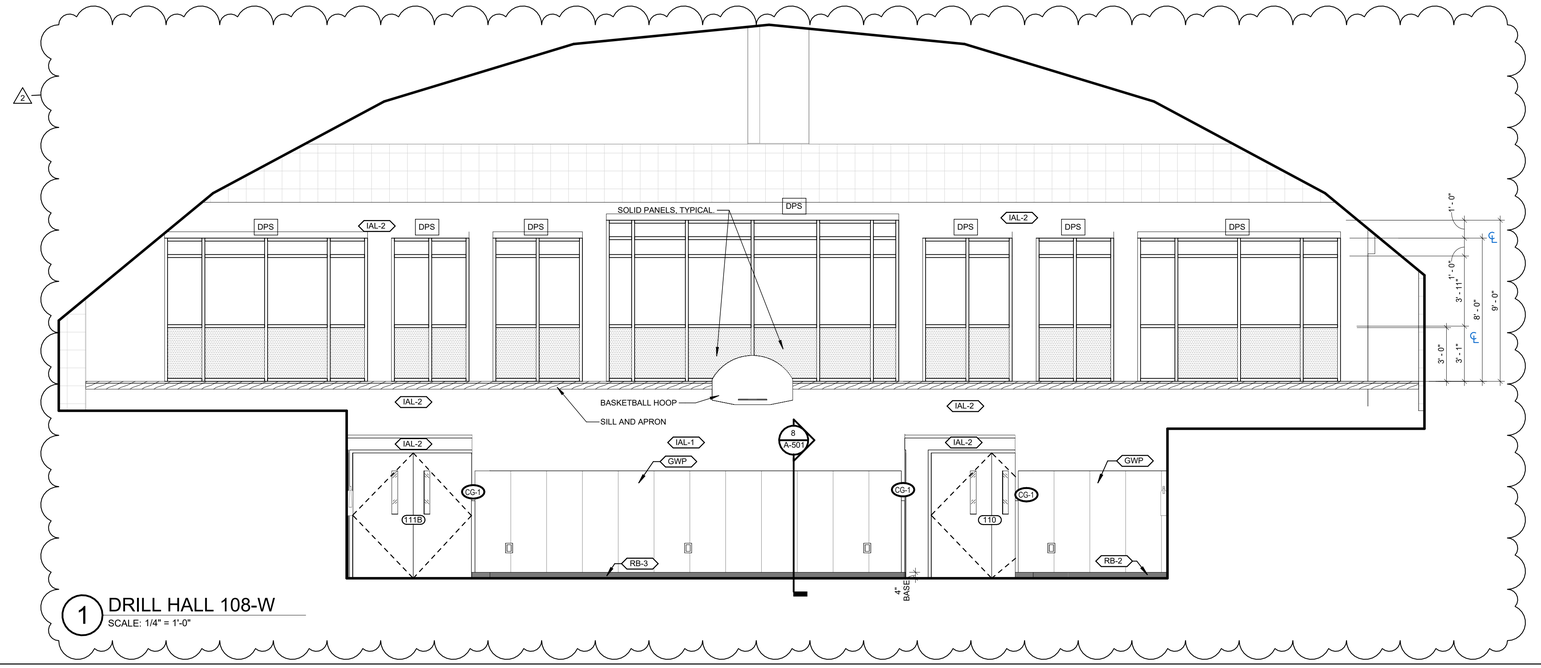
SHEET TITLE:

ENLARGED FLOOR PLANS

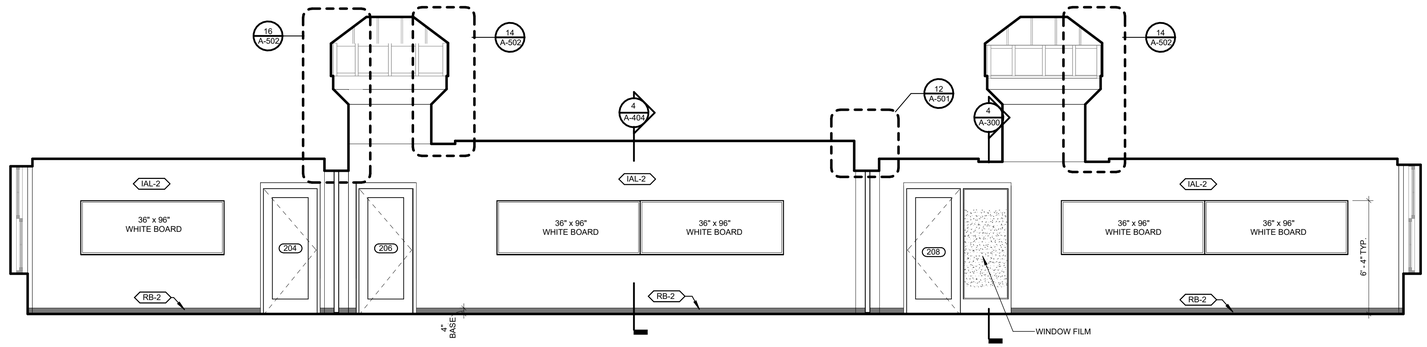
DRAWING NUMBER:

A-400

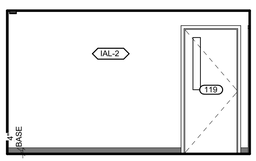
SHEET 32 OF 94



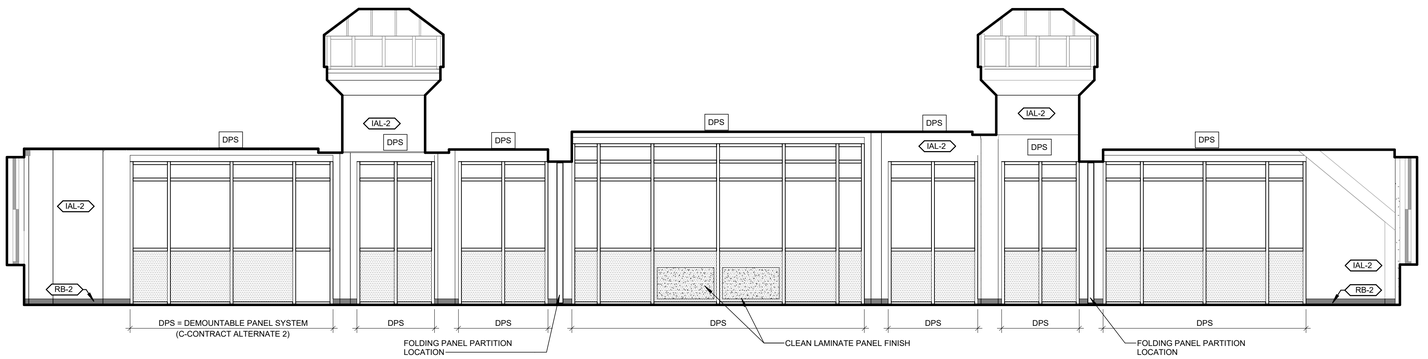
1 DRILL HALL 108-W
SCALE: 1/4" = 1'-0"



2 CONFERENCE/CLASSROOMS 204,206,208 - W1
SCALE: 1/4" = 1'-0"



4 DRILL HALL 108 - S
SCALE: 1/4" = 1'-0"



3 CONFERENCE/CLASSROOMS 204,206,208 - E1
SCALE: 1/4" = 1'-0"

24 x 36

NEW YORK STATE | Office of General Services
DESIGN & CONSTRUCTION

CONSULTANT

CERTIFICATE OF AUTHORIZATION No.:

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REGISTERED ARCHITECT
TRAVIS C OVERTON
035891
STATE OF NEW YORK

REGISTRATION EXPIRES: 03/31/2027

CONTRACT:
CONSTRUCTION

TITLE:
RENOVATE INTERIOR SPACES

LOCATION:
STATE ARMORY
150-74 6TH AVE,
WHITESTONE, NY.

CLIENT:
NEW YORK STATE DIVISION OF MILITARY AND NAVAL AFFAIRS

MARK	DATE	DESCRIPTION
2	06/27/2025	ADDENDUM 02
	05/20/2025	BID DOCUMENTS

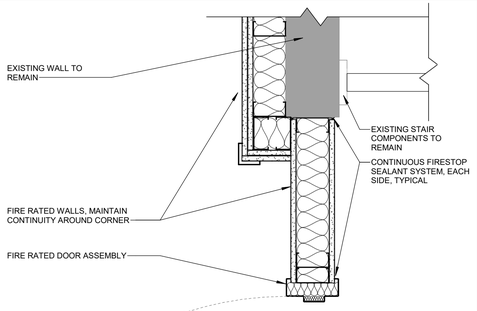
PROJECT NUMBER: 47592 – C

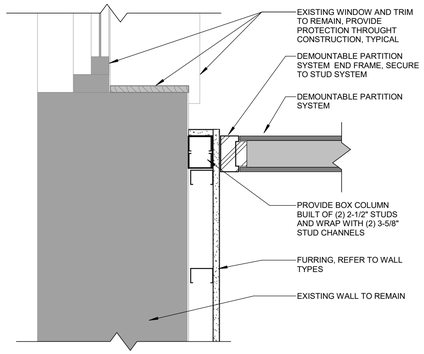
DESIGNED BY: TCO
DRAWN BY: LEW, WTF
FIELD CHECK:
APPROVED:

SHEET TITLE:
INTERIOR ELEVATIONS

DRAWING NUMBER:
A-403

SHEET 35 OF 94





7 PLAN DETAIL 7
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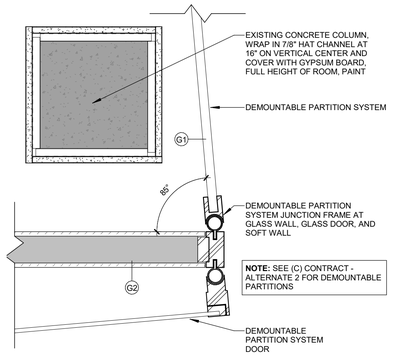

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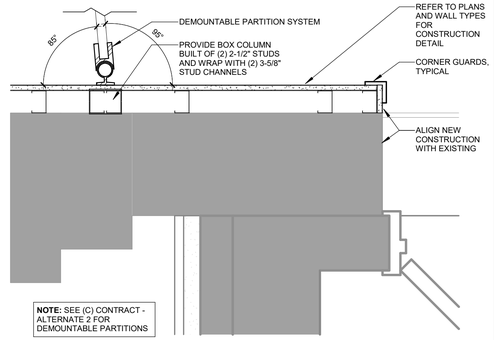

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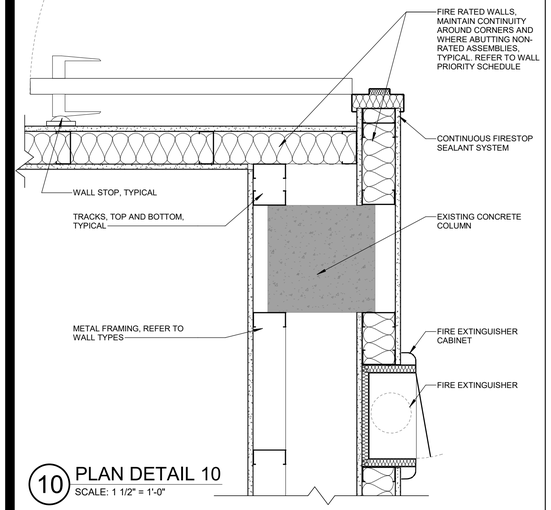

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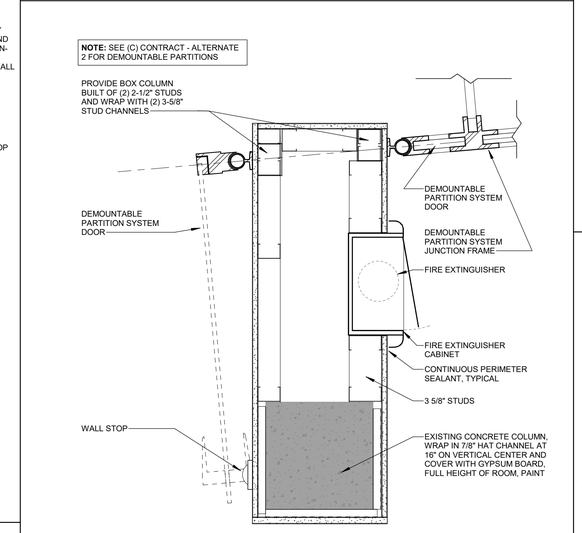

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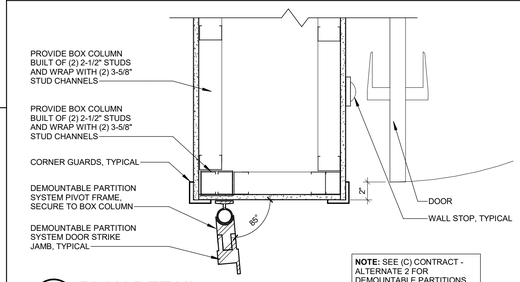

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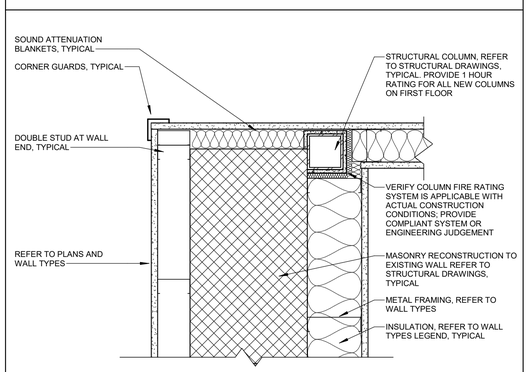

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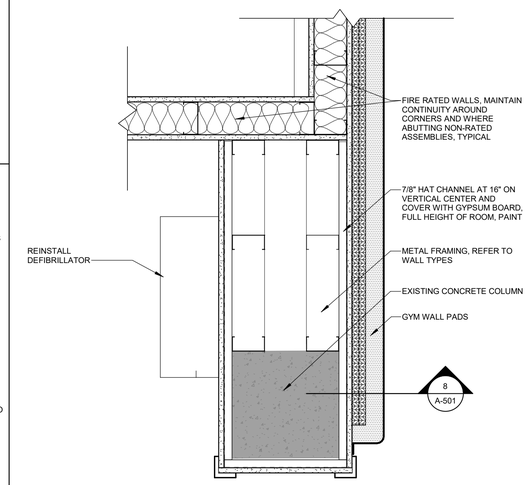
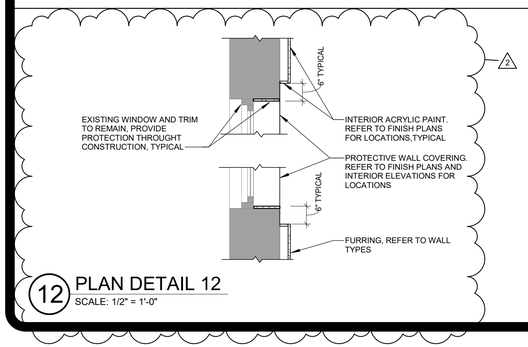


2 PLAN DETAIL 2
SCALE: 1 1/2" = 1'-0"

11 PLAN DETAIL 11
SCALE: 1 1/2" = 1'-0"



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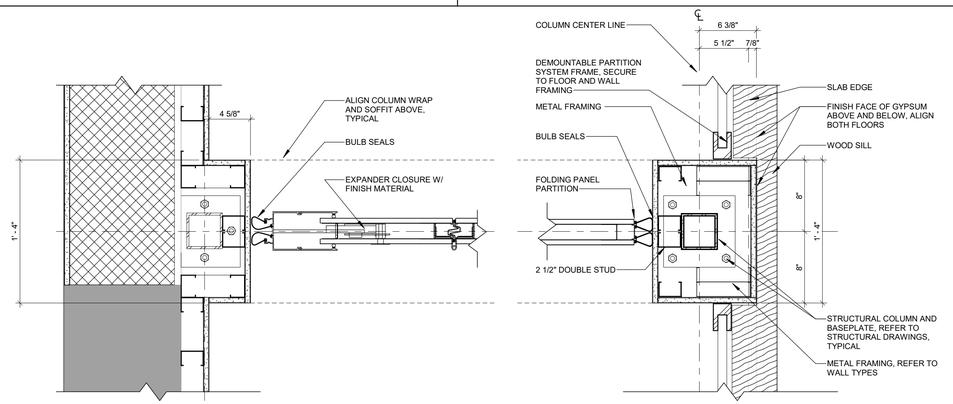
SCALE: 1/2" = 1'-0"



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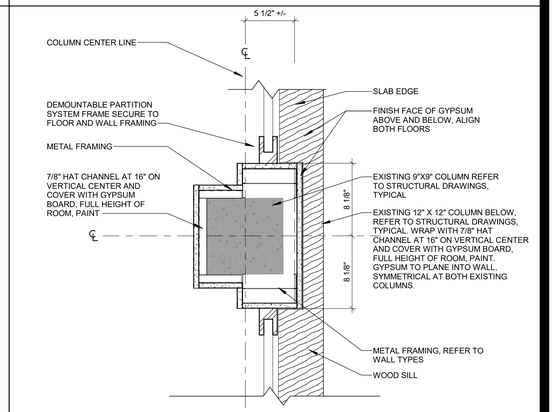
SCALE: 1 1/2" = 1'-0"



3 PLAN DETAIL 3
SCALE: 1 1/2" = 1'-0"

24 x 36

NEW YORK STATE | Office of General Services
DESIGN & CONSTRUCTION

CONSULTANT

CERTIFICATE OF AUTHORIZATION No.:

BCA ARCHITECTS ENGINEERS

BUILDING CODE COMPLIANCE:

COMPLIANCE STATEMENT:

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REGISTERED ARCHITECT TREVIS C OVERTON 035891 STATE OF NEW YORK

REGISTRATION EXPIRES: 03/31/2027

CONTRACT:

CONSTRUCTION

TITLE:

RENOVATE INTERIOR SPACES

LOCATION:

STATE ARMORY
150-74 6TH AVE,
WHITESTONE, NY.

CLIENT:

NEW YORK STATE DIVISION OF MILITARY AND NAVAL AFFAIRS

MARK	DATE	DESCRIPTION
	05/20/2025	BID DOCUMENTS
2	06/27/2025	ADDENDUM 02

PROJECT NUMBER:	47592 – C
DESIGNED BY:	TCO
DRAWN BY:	WTF
FIELD CHECK:	
APPROVED:	

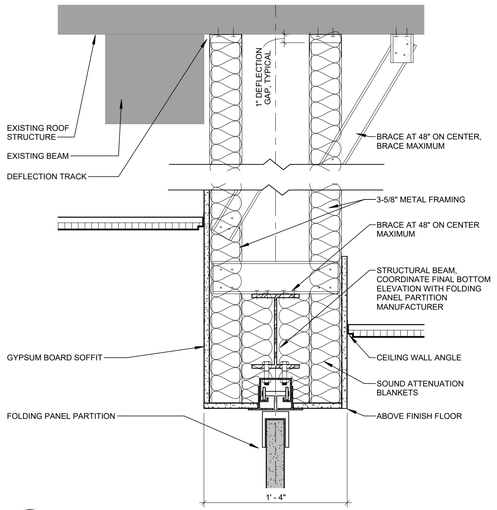
SHEET TITLE:

PLAN DETAILS

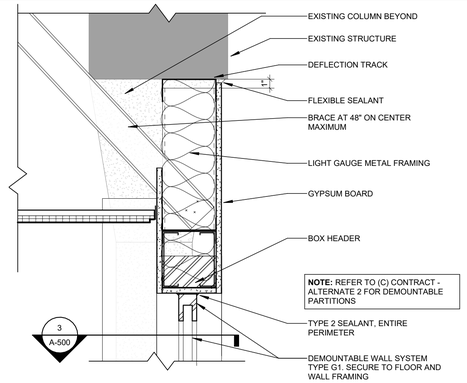
DRAWING NUMBER:

A-500

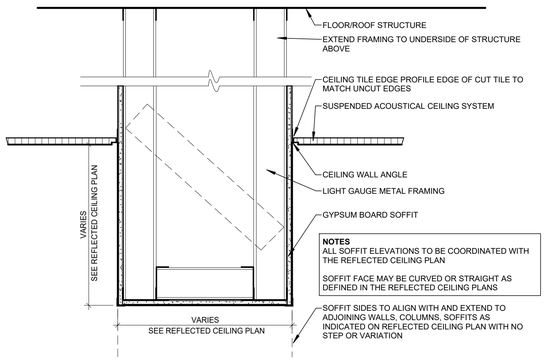
SHEET 38 OF 94



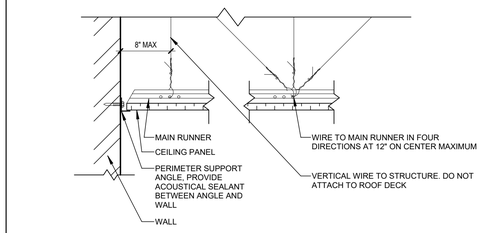
12 FOLDING PANEL PARTITION
SCALE: 1 1/2" = 1'-0"



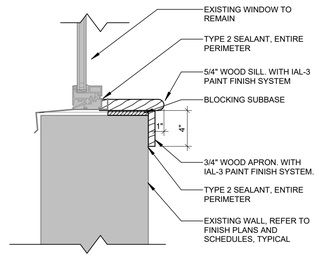
9 CEILING AT CLASSROOM
SCALE: 1 1/2" = 1'-0"



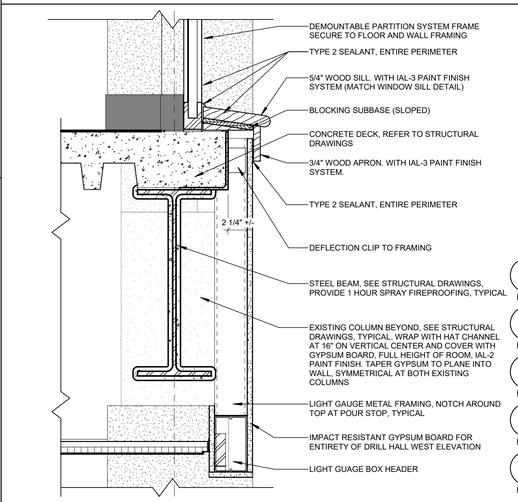
5 SOFFIT BULKHEAD
SCALE: 1 1/2" = 1'-0"



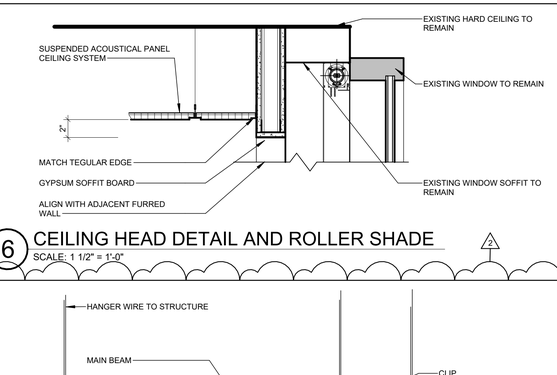
1 TYPICAL ACOUSTICAL PANEL CEILING SYSTEM
SCALE: 1 1/2" = 1'-0"



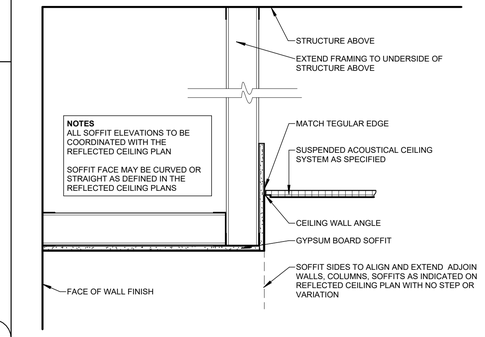
13 WINDOW SILL
SCALE: 1 1/2" = 1'-0"



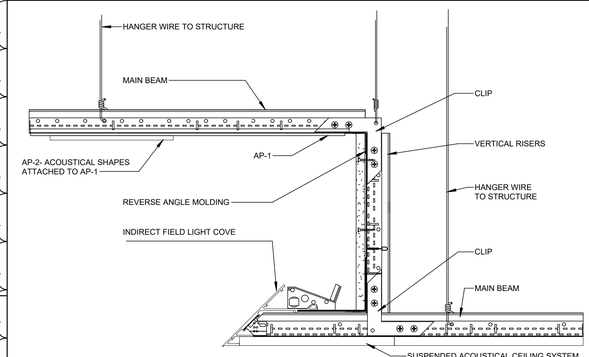
10 SECOND FLOOR SLAB DETAIL
SCALE: 1 1/2" = 1'-0"



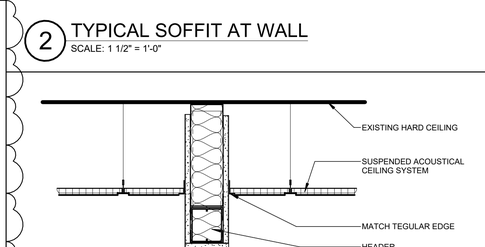
6 CEILING HEAD DETAIL AND ROLLER SHADE
SCALE: 1 1/2" = 1'-0"



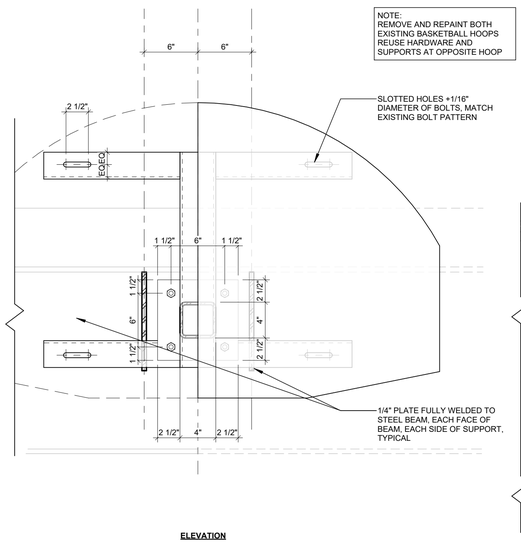
2 TYPICAL SOFFIT AT WALL
SCALE: 1 1/2" = 1'-0"

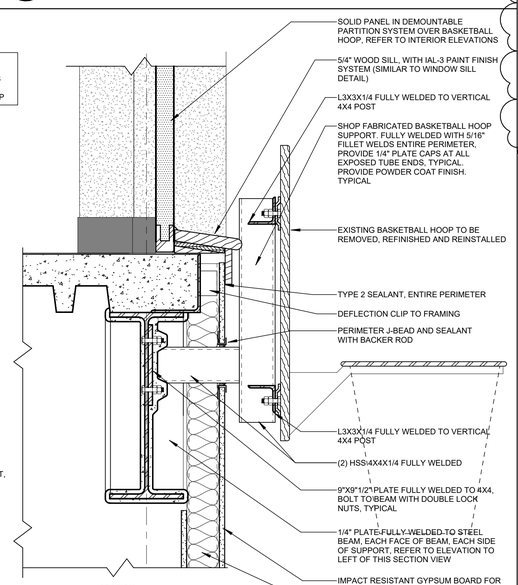


7 CEILING TO CEILING KNIFE EDGE
SCALE: NOT TO SCALE

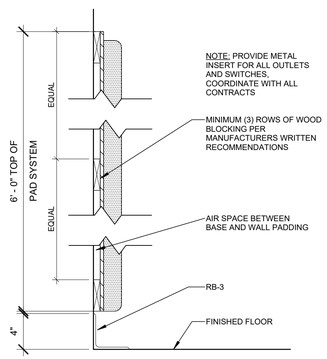


3 TYPICAL SOFFIT
SCALE: 1 1/2" = 1'-0"

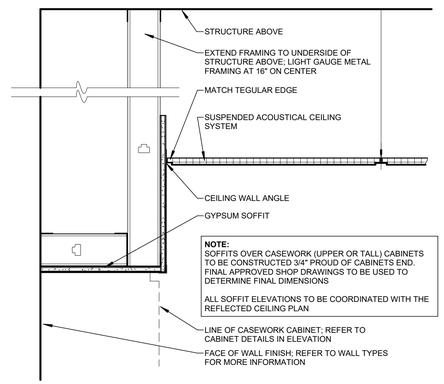




11 BACKBOARD MOUNTING DETAIL
SCALE: 1 1/2" = 1'-0"



8 WALL PADDING DETAIL
SCALE: 1 1/2" = 1'-0"



4 TYPICAL SOFFIT AT CASEWORK
SCALE: 1 1/2" = 1'-0"

24 X 36

NEW YORK STATE | Office of General Services
DESIGN & CONSTRUCTION

CONSULTANT

CERTIFICATE OF AUTHORIZATION No.:
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MARK	DATE	DESCRIPTION
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	05/20/2025	BID DOCUMENTS

PROJECT NUMBER:	47592 – C
DESIGNED BY:	TCO
DRAWN BY:	LEW, WTF
FIELD CHECK:	
APPROVED:	

SHEET TITLE:
SECTION DETAILS

DRAWING NUMBER:
A-501

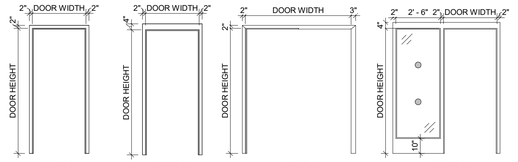
SHEET 39 OF 94

DOOR SCHEDULE

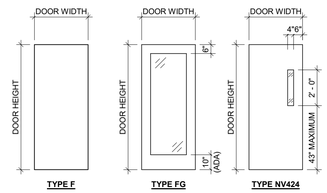
DOOR NUMBER	ROOM NUMBER	ROOM NAME	DOOR SIZE WIDTH	HEIGHT	THICKNESS	UNDERCUT	DOOR TYPE TYPE	MATERIAL	FINISH	FRAME TYPE TYPE	MATERIAL	FINISH	DETAILS HEAD	JAMB	HARDWARE	FIRE RATING	GLAZING	REMARKS
110	108A	NORTH PASSAGE	7' - 0"	7' - 0"	1 3/4"	5/8"	NV424	WOOD	FACTORY	1	STEEL	IAL-3	H1	J1	1.0	60 MINUTE	FPGL-3	1
111	110	LOBBY	7' - 0"	7' - 0"	1 3/4"	5/8"	NV424	WOOD	FACTORY	3	STEEL	IAL-3	H2	J2	2.0	60 MINUTE	FPGL-3	1
111A	111A	ELECTRICAL	5' - 4"	7' - 0"	1 3/4"	5/8"	F	WOOD	FACTORY	1	STEEL	IAL-3	H1	J1	3.0	-	-	-
111B	108B	SOUTH PASSAGE	7' - 0"	7' - 0"	1 3/4"	5/8"	NV424	WOOD	FACTORY	1	STEEL	IAL-3	H1	J1	1.0	45 MINUTE	FPGL-3	1
112	112	RECRUITING OFFICE	3' - 0"	7' - 0"	1 3/4"	5/8"	NV424	WOOD	FACTORY	1	STEEL	PAINT	H1	J1	4.0	60 MINUTE	FPGL-3	
113	113	FIA CO HQ	3' - 0"	7' - 6"	1"	5/8"	MANUFACTURER	MANUFACTURER	MANUFACTURER	MANUFACTURER	MANUFACTURER	MANUFACTURER	-	-	5.0	-	-	2
114	114	FIA CO HQ	3' - 0"	7' - 8"	1"	5/8"	MANUFACTURER	MANUFACTURER	MANUFACTURER	MANUFACTURER	MANUFACTURER	MANUFACTURER	-	-	5.0	-	-	2
115	115	FIA CO HQ	3' - 0"	7' - 8"	1"	5/8"	MANUFACTURER	MANUFACTURER	MANUFACTURER	MANUFACTURER	MANUFACTURER	MANUFACTURER	-	-	5.0	-	-	2
116	116	FIA CO HQ	3' - 0"	7' - 8"	1"	5/8"	MANUFACTURER	MANUFACTURER	MANUFACTURER	MANUFACTURER	MANUFACTURER	MANUFACTURER	-	-	5.0	-	-	2
117	117	MEN'S	3' - 0"	7' - 0"	1 3/4"	5/8"	F	WOOD	FACTORY	1	STEEL	IAL-3	H3	J3	6.0	-	-	-
118	118	WOMEN'S	3' - 0"	7' - 0"	1 3/4"	5/8"	F	WOOD	FACTORY	1	STEEL	IAL-3	H3	J3	6.0	-	-	-
119	119	FIA CO HQ	3' - 0"	7' - 0"	1 3/4"	5/8"	NV424	WOOD	FACTORY	1	STEEL	IAL-3	H1	J1	8.0	45 MINUTE	FPGL-3	-
132	132	SUPERS OFFICE	3' - 0"	7' - 0"	1 3/4"	5/8"	NV424	WOOD	FACTORY	1	STEEL	IAL-3	H1	J1	7.0	45 MINUTE	FPGL-3	-
133	133	JANITOR	3' - 0"	7' - 0"	1 3/4"	5/8"	F	WOOD	FACTORY	1	STEEL	IAL-3	H1	J1	9.0	45 MINUTE	-	-
202A	202A	ELECTRICAL	5' - 4"	7' - 0"	1 3/4"	5/8"	F	WOOD	FACTORY	1	STEEL	IAL-3	H1	J1	3.0	-	-	-
203	203	S1 & S4 ALOC	3' - 2"	7' - 8"	1"	5/8"	MANUFACTURER	MANUFACTURER	MANUFACTURER	MANUFACTURER	MANUFACTURER	MANUFACTURER	-	-	5.0	-	-	2
204	204	CONFERENCE	3' - 0"	7' - 0"	1 3/4"	5/8"	FG	WOOD	FACTORY	2	STEEL	IAL-3	H5	J5	11.0	45 MINUTE	FPGL-3	-
205	205	S3 OPs	3' - 0"	7' - 8"	1"	5/8"	MANUFACTURER	MANUFACTURER	MANUFACTURER	MANUFACTURER	MANUFACTURER	MANUFACTURER	-	-	5.0	-	-	2
206	206	CLASSROOM	3' - 0"	7' - 0"	1 3/4"	5/8"	FG	WOOD	FACTORY	2	STEEL	IAL-3	H5	J5	10.0	45 MINUTE	FPGL-3	-
207	207	MEN'S	3' - 0"	7' - 0"	1 3/4"	5/8"	F	WOOD	FACTORY	1	STEEL	IAL-3	H3	J3	6.0	-	-	-
208	208	CLASSROOM	3' - 0"	7' - 0"	1 3/4"	5/8"	FG	WOOD	FACTORY	4	STEEL	IAL-3	H5/H6	J5/J6	10.0	45 MINUTE	FPGL-3	-
209	209	WOMEN'S	3' - 0"	7' - 0"	1 3/4"	5/8"	F	WOOD	FACTORY	1	STEEL	IAL-3	H3	J3	6.0	-	-	-
210	210	JAN	3' - 0"	7' - 0"	1 3/4"	5/8"	F	WOOD	FACTORY	1	STEEL	IAL-3	H1	J1	12.0	-	-	-
211	211	WORK ROOM	3' - 0"	7' - 8"	1"	5/8"	MANUFACTURER	MANUFACTURER	MANUFACTURER	MANUFACTURER	MANUFACTURER	MANUFACTURER	-	-	5.0	-	-	2
212	212	BN XO	3' - 0"	7' - 8"	1"	5/8"	MANUFACTURER	MANUFACTURER	MANUFACTURER	MANUFACTURER	MANUFACTURER	MANUFACTURER	-	-	5.0	-	-	2
213	213	BN COMMANDER	3' - 0"	7' - 8"	1"	5/8"	MANUFACTURER	MANUFACTURER	MANUFACTURER	MANUFACTURER	MANUFACTURER	MANUFACTURER	-	-	5.0	-	-	2
214	214	BN XO	3' - 0"	7' - 8"	1"	5/8"	MANUFACTURER	MANUFACTURER	MANUFACTURER	MANUFACTURER	MANUFACTURER	MANUFACTURER	-	-	5.0	-	-	2
215	215	BN CSM	3' - 0"	7' - 8"	1"	5/8"	MANUFACTURER	MANUFACTURER	MANUFACTURER	MANUFACTURER	MANUFACTURER	MANUFACTURER	-	-	5.0	-	-	2
ST-1	ST-1	STAIR	3' - 0"	7' - 0"	1 3/4"	5/8"	NV424	WOOD	FACTORY	1	STEEL	IAL-3	H4	J4	13.0	60 MINUTE	FPGL-3	-
ST-2	ST-2	ROOF ACCESS	3' - 0"	7' - 0"	1 3/4"	5/8"	F	WOOD	FACTORY	1	STEEL	IAL-3	H4	J4	9.0	60 MINUTE	-	-

BORROWED LIGHT SCHEDULE

LITE NUMBER	ROOM NUMBER	ROOM NAME	TYPE	MATERIAL	FINISH	GLAZING TYPE	FIRE RATING	ANCHORS	DEPTH	DETAILS SILL	DETAILS DEPTH	DETAILS HEAD	COMMENTS	LITE NUMBER
208	208	CLASSROOM	4	STEEL	IAL-3	FPGL-3	FPGL-3	MASONRY	9 3/4"		J6	H6		208



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



2 DOOR TYPES
SCALE: 1/4" = 1'-0"

REMARKS

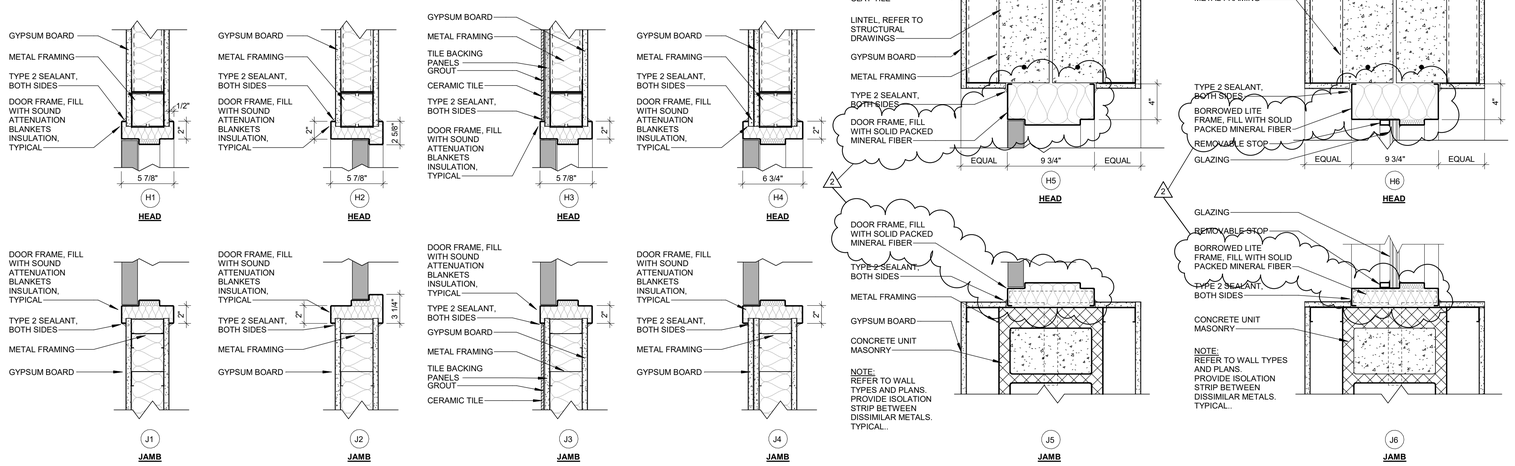
1. COORDINATE MAGNETIC HOLD OPEN WITH FIRE ALARM (P) AND ELECTRICAL (E) CONTRACTS.
2. DOOR AND FRAME COMPONENTS AND CONNECTIONS ARE PART OF THE DEMOUNTABLE PARTITION SYSTEM (DPS) C-CONTRACT - ALTERNATE 2.

LIGHT GAUGE HEADER SCHEDULE

4" INTERIOR METAL STUD WALLS:
- UP TO 6'-0" OPENING = 400S162-33
- 6'-6" TO 8'-0" OPENING = 400S162-54
- 8'-6" TO 9'-0" OPENING = 400S162-97

6" INTERIOR METAL STUD WALLS:
- UP TO 10'-0" OPENING = 800S162-54
- 11'-0" TO 12'-0" OPENING = 1000S162-54

LIGHT GAUGE METAL FRAMING NOTES
1. MEMBER DESIGNATIONS ARE SSMA STANDARD
2. MINIMUM EXTERIOR STUD WALL GAUGE = 16, 1 5/8" WIDE FLANGE
3. MINIMUM INTERIOR STUD WALL GAUGE = 20, 1 5/8" WIDE FLANGE
4. ROOF FRAMING RAFTERS/ JOISTS GAUGE = 14
5. TOP AND BOTTOM TRACK SHALL MATCH OUTSIDE GAUGE (EXCEPT FOR BOX HEADERS, REFER TO SCHEDULE.)



3 DOOR DETAILS
SCALE: 1 1/2" = 1'-0"

24 x 36

NEW YORK STATE | Office of General Services
DESIGN & CONSTRUCTION

CONSULTANT

CERTIFICATE OF AUTHORIZATION No.:

BCA ARCHITECTS ENGINEERS

BUILDING CODE COMPLIANCE:

COMPLIANCE STATEMENT:

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REGISTERED ARCHITECT TROY IS C OVERTON 035891 STATE OF NEW YORK

REGISTRATION EXPIRES: 03/31/2027

CONTRACT:

CONSTRUCTION

TITLE:

RENOVATE INTERIOR SPACES

LOCATION:

STATE ARMORY
150-74 6TH AVE,
WHITESTONE, NY.

CLIENT:

NEW YORK STATE DIVISION OF MILITARY AND NAVAL AFFAIRS

MARK	DATE	DESCRIPTION
2	06/27/2025	ADDENDUM 02
	05/20/2025	BID DOCUMENTS

PROJECT NUMBER: 47592 – C

DESIGNED BY: TCO
DRAWN BY: WTF, OAC
FIELD CHECK:
APPROVED:

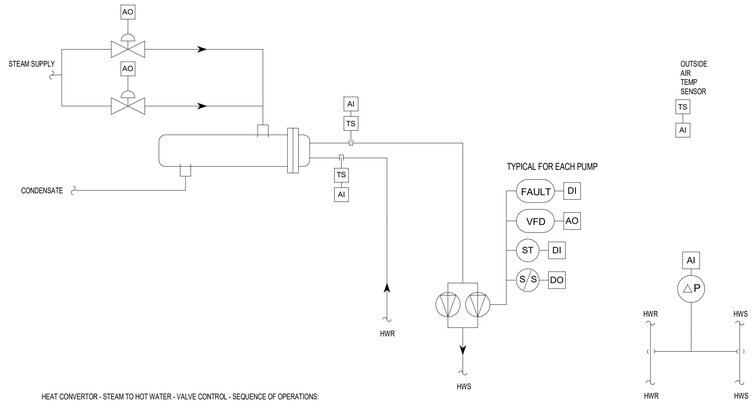
SHEET TITLE:

DOOR AND FRAME SCHEDULES, ELEVATIONS AND DETAILS

DRAWING NUMBER:

A-600

SHEET 41 OF 94



HEAT CONVERTOR - STEAM TO HOT WATER - VALVE CONTROL - SEQUENCE OF OPERATIONS:

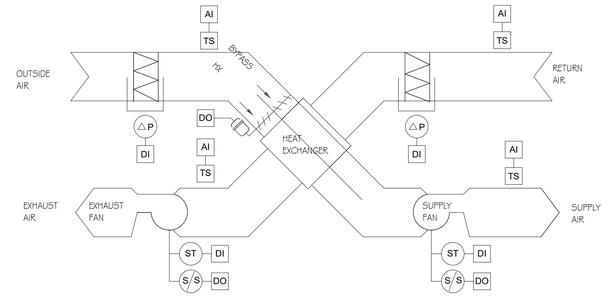
1. ALL MODES:

   a. THE LEAD HEAT CONVERTOR AND LEAD PUMP SHALL BE ENABLED WHEN THE OUTSIDE AIR TEMPERATURE IS BELOW 60°F (ADJUSTABLE).
   b. ONCE PUMP(S) ARE ENABLED THE LEAD STEAM SUPPLY CONTROL VALVE(S) SHALL MODULATE TO MAINTAIN A HOT WATER SETPOINT OF 180°F (ADJUSTABLE). UPON FAILURE OF THE LEAD HEAT CONVERTOR AS SENSED BY LOW WATER SUPPLY TEMPERATURE, AN ALARM SHALL BE GENERATED, THE HEAT EXCHANGER CONTROL VALES SHALL CLOSE AND THE LAG HEAT CONVERTOR STEAM CONTROL VALVE(S) SHALL MODULATE TO MAINTAIN HOT WATER SETPOINT.
   c. THE BUILDING CONTAINS A SET OF BUILDING HOT WATER PUMPS. THE PUMPS SHALL BE OPERATED IN A LEAD/LAG SEQUENCE TO EQUALIZE THE RUN TIME OF THE TWO PUMPS. WHEN ENABLED, THE LEAD PUMP SHALL START. UPON A FAILURE OF THE LEAD PUMP, AS SENSED BY A CURRENT SENSING STATUS SWITCH, AN ALARM SHALL BE GENERATED, THE PUMP SHALL BE TURNED OFF, AND THE LAG PUMP SHALL START. UPON A FAILURE OF THE LAG PUMP, AS SENSED BY A CURRENT SENSING STATUS SWITCH, AN ALARM SHALL BE GENERATED, AND THE PUMP SHALL BE TURNED OFF.
   d. EACH BUILDING HOT WATER PUMP CONTAINS A VARIABLE SPEED DRIVE THAT SHALL BE CONTROLLED TO MAINTAIN A CONSTANT DIFFERENTIAL PRESSURE AS SENSED BY A PRESSURE SENSOR LOCATED AS SHOWN ON THE DRAWINGS, TWO-THIRDS OF THE WAY DOWNSTREAM OF THE PUMP IN THE LONGEST OR MOST CRITICAL PIPE.

2. PROVIDE AN ALARM FOR EACH OF THE FOLLOWING:

   a. PUMP FAILURE
   b. VARIABLE SPEED DRIVE FAILURE.
   c. HOT WATER SUPPLY TEMPERATURE SETPOINT LOW/HIGH LIMITS
   d. HOT WATER RETURN TEMPERATURE SETPOINT LOW/HIGH LIMITS.

HEAT CONVERTOR - STEAM TO HOT WATER (HX-1) — 3
NOT TO SCALE



ENERGY RECOVERY UNIT - FIXED CORE PLATE HEAT EXCHANGER - SEQUENCE OF OPERATIONS:

1. OCCUPIED MODE:

   a. SUPPLY AND EXHAUST FANS SHALL RUN CONTINUOUSLY.
   b. THE ASSOCIATE OUTSIDE AIR DAMPER AND EXHAUST AIR DAMPERS SHALL BE FULLY OPEN.
   c. HEAT RECOVERY SECTIONS SHALL OPERATE UNDER ITS INTERNAL CONTROLS.

2. ECONOMIZER BYPASS:

   a. WHEN SPACE CALLS FOR COOLING AND THE OUTSIDE AIR IS BELOW THE EXHAUST AIR, BYPASS DAMPERS SHALL OPEN TO ALLOW THE OUTSIDE AIR TO BYPASS THE HEAT RECOVERY SECTION.

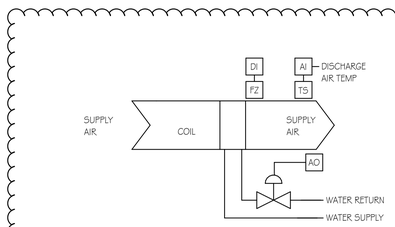
3. UNOCCUPIED MODE:

   a. THE SUPPLY AND EXHAUST FANS SHALL BE OFF.
   b. THE OUTSIDE AIR DAMPER AND EXHAUST AIR DAMPER SHALL BE FULLY CLOSED.

4. SAFETIES / OTHER CONTROL FUNCTIONS:

   a. PROVIDE AND ALARM IN CASE OF DISCHARGE AIR TEMPERATURE LOW/HIGH LIMITS.
   b. PROVIDE AND ALARM IN CASE OF SUPPLY OR RETURN FAN FAILURE.
   c. A MANUAL RESET LOW LIMIT SHALL BE HARD WIRED TO STOP THE FAN IF THE COIL DISCHARGE TEMPERATURE DROPS BELOW THE LOW LIMIT SET POINT OF 43°F (ADJUSTABLE). THE DDC SYSTEM SHALL MONITOR THE STATUS OF THIS LOW LIMIT.
   d. A FILTER PRESSURE SWITCH SHALL BE PROVIDED FOR EACH FILTER, AND AN ALARM SHALL BE GENERATED WHEN THE PRESSURE DROP ACROSS THE FILTER EXCEEDS THE PREDETERMINED SET POINT.
   e. PROVIDE AN ALARM IN CASE OF STATIC PRESSURE LOW/HIGH LIMIT.

2 ENERGY RECOVERY UNIT
N.T.S.



DUCT MOUNTED DUAL TEMP COIL - WATER - SEQUENCE OF OPERATIONS:

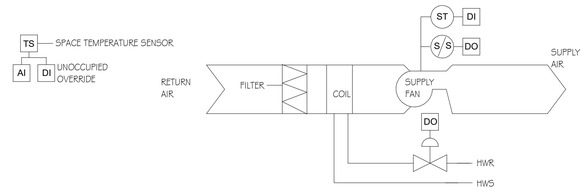
1. OCCUPIED MODE:

   a. WHEN THE SPACE TEMPERATURE IS AT OR BELOW THE HEATING SETPOINT AND THE RELATED FAN SYSTEM HAS BEEN ENABLED, THE CONTROL VALVE SHALL MODULATE TO MAINTAIN DISCHARGE HEATING SETPOINT OF 68 DEG. F (ADJUSTABLE).
   b. WHEN THE SPACE TEMPERATURE IS AT OR ABOVE THE COOLING SETPOINT AND THE RELATED FAN SYSTEM HAS BEEN ENABLED, THE CONTROL VALVE SHALL MODULATE TO MAINTAIN DISCHARGE COOLING SETPOINT OF 72 DEG. F (ADJUSTABLE).

2. SAFETIES:

   a. A SEPARATE LOW LIMIT FREEZE STAT WITH AUTOMATIC RESET SHALL BE INSTALLED WITH SENSING ELEMENT SERPENTINED ACROSS THE FACE OF THE COIL, WHENEVER COIL FREEZE-UP CONDITIONS ARISE (36 DEG. F ADJUSTABLE) THE SUPPLY FAN SHALL STOP, THE OUTSIDE AIR DAMPER SHALL CLOSE 100% AND THE CONTROL VALVE SHALL OPEN 100%. AN ALARM SHALL ALSO BE ACTIVATED.

4 DUCT MOUNTED DUAL TEMP COIL - WATER - VALVE CONTROL
N.T.S.



FAN COIL UNIT - VALVE CONTROL - SEQUENCE OF OPERATIONS:

1. OCCUPIED MODE:

   a. WHEN THE SPACE TEMPERATURE IS AT OR BELOW THE HEATING SETPOINT, CYCLE THE SUPPLY FAN ON AND THE CONTROL VALVE FULL OPEN TO MAINTAIN SPACE SETPOINT.

2. UNOCCUPIED MODE:

   a. ON DROP IN SPACE TEMPERATURE BELOW THE UNOCCUPIED SETPOINT, CYCLE THE SUPPLY FAN ON AND THE CONTROL VALVE FULL OPEN TO MAINTAIN SPACE UNOCCUPIED SETPOINT.
   b. A TIMED LOCAL OVERRIDE CONTROL SHALL ALLOW AN OCCUPANT TO OVERRIDE THE SCHEDULE AND PLACE THE UNIT INTO OCCUPIED MODE FOR 1 HOUR (ADJUSTABLE). AT EXPIRATION OF THIS TIME, CONTROL OF THE UNIT SHALL AUTOMATICALLY RETURN TO THE SCHEDULE.

3. WARM-UP MODE:

   a. THE UNIT SHALL START PER AN OPTIMAL START PROGRAM.

1 FAN COIL UNIT - VALVE CONTROL
N.T.S.

24 x 36

NEW YORK STATE | Office of General Services

CONSULTANT

CERTIFICATE OF AUTHORIZATION No.: 0022724

BCA ARCHITECTS ENGINEERS

CABEZAS ENGINEERING, PLLC
New York State Certified MBE Firm
Mechanical, Electrical and Plumbing Engineering

BUILDING CODE COMPLIANCE:

COMPLIANCE STATEMENT:

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STATE OF NEW YORK · HOWARD J. CABEZAS · 059 107 79 · LICENSED PROFESSIONAL ENGINEER

REGISTRATION EXPIRES: 8/31/2026

CONTRACT:
HVAC

TITLE:
RENOVATE INTERIOR SPACES

LOCATION:
STATE ARMORY
150-74 6TH AVE
WHITESTONE, NY

CLIENT:
NYS DIVISION OF MILITARY AND NAVAL AFFAIRS

MARK	DATE	DESCRIPTION
2	6/25/25	BID ADDENDUM 2
1	6/12/25	BID ADDENDUM 1
	5/20/25	BID DOCUMENTS

PROJECT NUMBER: 47592 – H

DESIGNED BY: HJC
DRAWN BY: HJC
FIELD CHECK:
APPROVED:

SHEET TITLE:
CONTROL SCHEMATICS

DRAWING NUMBER:
M400

SHEET 51 OF 94

SHELL AND TUBE CONVERTER SCHEDULE

UNIT TAG	SHELL DIA. (IN)	SHELL LENGTH (IN)	HEAT TRANSFER		STEAM SIDE		FLUID SIDE						BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL NUMBER
			CAPACITY (BTUH)	REQ'D SURFACE AREA (SQ FT)	PRESSURE (PSIG)	LB/HR	MEDIUM	GPM	EWT (°F)	LWT (°F)	WPD (PSIG)			
HX-1	10-3/4	41	1,876,000	31.5	6	1,934	30% GLYCOL	180	120	140	0.4		BELL AND GOSSETT	SU-103-2

REHEAT COIL SCHEDULE

UNIT TAG	SERVICE	MBH	CFM	EAT (°F)	LAT (°F)	COIL SIZE (HxL)	APD (IN WG)	EWT (°F)	LWT (°F)	GPM	WPD (FT HD)	ROWS	FIN/IN	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL NUMBER	REMARKS
RHC-1	ERU-1	9.49	350	45	70	8x8	0.059	120	114	4	0.59	1	121	TRANE	D5W12012G0AA121	1
RHC-2	ERU-2	20.74	765	45	70	18x8	0.176	120	112	6	0.47	2	97	TRANE	D5WB12016G0BA097	1

1 SELECTIONS BASED ON 30% GLYCOL.

EXPANSION TANK SCHEDULE

UNIT TAG	SERVICE	TYPE	ACCEPTANCE VOLUME (GALLONS)	TANK VOLUME (GALLONS)	DIAMETER (IN)	LENGTH (IN)	FILL PRESSURE (PSI)	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL NUMBER	
ET-1	HOT WATER	BLADDER	80	80	24	55	12	BELL AND GOSSETT	B-300	

AIR INLET AND OUTLET SCHEDULE

TYPE	DESCRIPTION	SERVICE	SIZE	CFM RANGE	NECK SIZE	MAX NECK VELOCITY (FPM)	MAX APD (IN WG)	MAX NC	MATERIAL	BASIS OF DESIGN MANUFACTURER AND MODEL	REMARKS
SG	GRILLE	SUPPLY	7.75x7.75	0-75	6x6	400	0.03	20	ALUMINUM	KRUGER 580	1
			9.75x7.75	76-220	8x8	603	0.06	20			
			11.75x11.75	221-360	10x10	606	0.06	20			
EG	GRILLE	EXHAUST	7.75x7.75	0-100	6x6	525	0.06	20	ALUMINUM	KRUGER S580	1
			9.75x7.75	101-200	8x8	550	0.06	20			
			11.75x11.75	201-300	10x10	510	0.05	20			

1 W/ OPPOSED BLADE VOLUME DAMPER IN NECK.

PUMP SCHEDULE

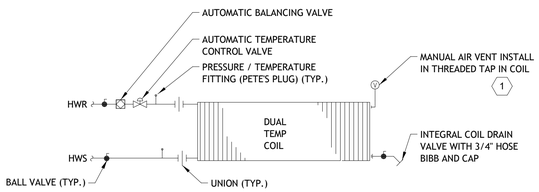
UNIT TAG	LOCATION	SERVICE	SYSTEM FLUID	GPM	HEAD FT. WG.	% EFF.	RPM	ELECTRICAL				BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL NUMBER	REMARKS
								HP	BHP	VOLTS	PHASE			
P-1	BASEMENT	HWS	30% GLYCOL	180	45	71.9	1800	5.5	--	230	3	BELL AND GOSSETT	E-1510x 2.5AC	1
P-2	BASEMENT	HWS	30% GLYCOL	180	45	71.9	1800	5.5	--	230	3	BELL AND GOSSETT	E-1510x 2.5AC	1

1 PROVIDE WITH MANUFACUERER PROVIDED VARIABLE FREQUENCY DRIVE

FAN COIL UNIT SCHEDULE

UNIT NUMBER	LOCATION	FAN DATA		HTG. DATA					COIL DATA				FILTER TYPE	ELECTRICAL			MODEL NO.	REMARKS & NOTES
		CFM (TOTAL)	TOTAL SP (")	EAT	EWT	GPM	MAX WPD	CAP MBH	SENS MBH	TOTAL MBH	EWT	GPM		MOTOR WATTS	VOLTS	PHASE		
FCU-1	ENTRANCE 109	200	0.202	60	140	1.5	3.36	12.89	4.98	4.98	45	1.5	1" MERV 8	40	115	1	FCJB020	1, 2
FCU-2	STAIR 109A	200	0.202	60	140	1.5	3.36	12.89	4.98	4.98	45	1.5	1" MERV 8	40	115	1	FCJB020	1, 2
FCU-3	RECRUITING OFFICE 112	600	0.432	60	140	4.5	7.75	35.64	15.15	15.15	45	4.5	1" MERV 8	135	115	1	FCJB060	1, 2
FCU-4	RECRUITING OFFICE 112	600	0.432	60	140	4.5	7.75	35.64	15.15	15.15	45	4.5	1" MERV 8	135	115	1	FCJB060	1, 2
FCU-5	FIA CO HQ 113	400	0.395	60	140	3.0	13.25	24.17	10.45	10.45	45	3.0	1" MERV 8	98	115	1	FCJB040	1, 2
FCU-6	FIA CO HQ 114	400	0.395	60	140	3.0	13.25	24.17	10.45	10.45	45	3.0	1" MERV 8	98	115	1	FCJB040	1, 2
FCU-7	FIA CO HQ 115	300	0.373	60	140	2.25	6.95	16.86	7.3	7.3	45	2.25	1" MERV 8	75	115	1	FCJB030	1, 2
FCU-8	FIA CO HQ 116	300	0.373	60	140	2.25	6.95	16.86	7.3	7.3	45	2.25	1" MERV 8	75	115	1	FCJB030	1, 2
FCU-9	FIA CO HQ 119	300	0.373	60	140	2.25	6.95	16.86	7.3	7.3	45	2.25	1" MERV 8	75	115	1	FCJB030	1, 2
FCU-10	WOMENS 118	200	0.213	60	140	1.5	3.36	12.89	4.98	4.98	45	1.5	1" MERV 8	41	115	1	FCDB020	1, 2
FCU-11	MENS 117	200	0.213	60	140	1.5	3.36	12.89	4.98	4.98	45	1.5	1" MERV 8	41	115	1	FCDB020	1, 2
FCU-12	SUPERS OFFCIE 132	300	0.373	60	140	2.25	6.95	16.86	7.3	7.3	45	2.25	1" MERV 8	75	115	1	FCJB030	1, 2
FCU-13	WORK ROOM 211	800	0.436	60	140	6.0	14.63	47.65	20.27	20.27	45	6.0	1" MERV 8	215	115	1	FCJB080	1, 2
FCU-14	BN CSM 215	300	0.373	60	140	2.25	6.95	16.86	7.3	7.3	45	2.25	1" MERV 8	75	115	1	FCJB030	1, 2
FCU-15	BN COMMANDER 213	300	0.373	60	140	2.25	6.95	16.86	7.3	7.3	45	2.25	1" MERV 8	75	115	1	FCJB030	1, 2
FCU-16	KITCHEN/COPIER 202C	200	0.213	60	140	1.5	3.36	12.89	4.98	4.98	45	1.5	1" MERV 8	41	115	1	FCDB030	1, 2
FCU-17	WOMENS 209	300	0.373	60	140	2.25	6.95	16.86	7.3	7.3	45	2.25	1" MERV 8	75	115	1	FCJB030	1, 2
FCU-18	MENS 207	300	0.373	60	140	2.25	6.95	16.86	7.3	7.3	45	2.25	1" MERV 8	75	115	1	FCJB030	1, 2
FCU-19	S3 OPS 205	400	0.395	60	140	3.0	13.25	24.17	10.45	10.45	45	3.0	1" MERV 8	98	115	1	FCJB040	1, 2
FCU-20	S1 & S4 ALOC 203	400	0.395	60	140	3.0	13.25	24.17	10.45	10.45	45	3.0	1" MERV 8	98	115	1	FCJB040	1, 2
FCU-21	CONFERENCE 204	400	0.395	60	140	3.0	13.25	24.17	10.45	10.45	45	3.0	1" MERV 8	98	115	1	FCJB040	1, 2
FCU-22	CLASSROOM 206	800	0.436	60	140	6.0	14.63	47.65	20.27	20.27	45	6.0	1" MERV 8	215	115	1	FCJB080	1, 2
FCU-23	CLASSROOM 208	800	0.436	60	140	6.0	14.63	47.65	20.27	20.27	45	6.0	1" MERV 8	215	115	1	FCJB080	1, 2
FCU-24	CORRIDOR 202B	300	0.400	60	140	1.5	3.35	16.86	6.71	6.71	45	1.5	1" MERV 8	78	115	1	FCDB030	1, 2
FCU-25	BN XO 212	300	0.373	60	140	2.25	6.95	16.86	7.3	7.3	45	2.25	1" MERV 8	75	115	1	FCJB030	1, 2
FCU-26	BN XO 214	300	0.373	60	140	2.25	6.95	16.86	7.3	7.3	45	2.25	1" MERV 8	75	115	1	FCJB030	1, 2
FCU-27	LOBBY 202	300	0.400	60	140	1.5	3.35	16.86	6.71	6.71	45	1.5	1" MERV 8	78	115	1	FCDB030	1, 2

1. BASIS OF DESIGN MANUFACTURER TRANE.
2. PROVIDE HIGH STATIC MOTOR.



1 WHERE COIL IS SUPPLIED FROM OVERHEAD, PROVIDE MANUAL AIR VENT AT HIGH POINT IN HOT WATER SUPPLY PIPING.

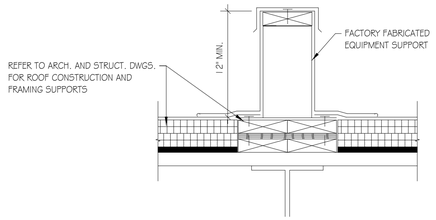
NOTE: GENERIC SYMBOL USED TO SHOW VALVE LOCATION(S) REFER TO SPECIFICATIONS FOR EXACT VALVE TYPE.

1 FAN COIL PIPING SCHEMATIC
N.T.S.

ENERGY RECOVERY UNIT SCHEDULE

UNIT NO.	LOCATION	SERVES	MODEL	SUPPLY FAN						EXHAUST FAN						ELECTRIC DATA				NOTES
				FAN TYPE	OA CFM	ESP	RPM	BHP	HP	FAN TYPE	EA CFM	ESP	RPM	BHP	HP	VOLTS	PHASE	MCA	MOP	
ERU-1	ROOF	1ST FLOOR	ERC-E1-L-F	FORWARD CURVE	350	0.5	1000	-	1/2	FORWARD CURVE	350	0.5	919	-	1/2	208	1	8.6	15	1, 2, 3, 4, 5
ERU-2	ROOF	2ND FLOOR	ERC-E1-H-P	FORWARD CURVE	765	0.5	1337	-	3/4	FORWARD CURVE	765	0.5	1225	-	3/4	208	1	12.2	15	1, 2, 3, 4, 5

NOTES:
1. SINGLE POINT ELECTRICAL CONNECTION.
2. DIRECT DRIVE ON FANS
3. PROVIDE BACKDRAFT DAMPER ON EXHAUST AIR AND MOTORIZED INTAKE DAMPER ON OURSIDE AIR
4. PROVIDE ROOF CURB
5. PROVIDE EXHAUST AND OUTSIDE AIR HOODS.



NOTE:
COORDINATE LOCATION OF ROOF SUPPORTS WITH CONTRACTOR RESPONSIBLE FOR FOR STRUCTURAL STEEL SUPPORTS.

2 ROOF EQUIPMENT SUPPORT DETAIL
N.T.S.

24 x 36

NEW YORK STATE | Office of General Services

CONSULTANT

CERTIFICATE OF AUTHORIZATION No.: 0022724

BCA ARCHITECTS ENGINEERS

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New York State Certified MBE Firm
Mechanical, Electrical and Plumbing Engineering

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TO THE BEST OF THE REGISTERED DESIGN PROFESSIONAL'S KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE DRAWINGS AND / OR SPECIFICATIONS ARE IN COMPLIANCE WITH THE 2020 ENERGY CODE.

STATE OF NEW YORK · EDWARD J CABEZAS · 059 107 79 · LICENSED PROFESSIONAL ENGINEER

REGISTRATION EXPIRES: 8/31/2026

CONTRACT:

HVAC

TITLE:

RENOVATE INTERIOR SPACES

LOCATION:

STATE ARMORY
150-74 6TH AVE
WHITESTONE, NY

CLIENT:

NYS DIVISION OF MILITARY AND NAVAL AFFAIRS

MARK	DATE	DESCRIPTION
2	6/25/25	BID ADDENDUM 2
1	6/12/25	BID ADDENDUM 1
	5/20/25	BID DOCUMENTS

PROJECT NUMBER: 47592 – H

DESIGNED BY: HJC
DRAWN BY: HJC
FIELD CHECK:
APPROVED:

SHEET TITLE:

SCHEDULES AND DETAILS

2

DRAWING NUMBER:

M600

SHEET 53 OF 94

FIRE PROTECTION NOTES AND SYMBOLS LEGEND

●	PENDENT SPRINKLER
◎	UPRIGHT SPRINKLER
⊠	UPRIGHT SPRINKLER WITH HEAD GUARD AND WATER SHIELD
⦸	UPRIGHT SPRINKLER WITH HEAD GUARD
●D	DRY FLEXIBLE PENDENT SPRINKLER
▷	DRY SIDEWALL SPRINKLER
▶	IT WET SIDEWALL SPRINKLER
———	FIRE PROTECTION PIPING
———FDC———	FIRE DEPARTMENT CONNECTION PIPING
◯	PIPE UP
◠	PIPE DOWN
◠	RISER NIPPLE
WFS	WATER FLOW SWITCH
TS	TAMPER SWITCH
TS-NC	TAMPER SWITCH SUPERVISED NORMALLY CLOSED
⊰	FIRE DEPARTMENT CONNECTION
↘	CHECK VALVE

FIRE PROTECTION ABBREVIATIONS LEGEND

IAW	IN ACCORDANCE WITH
FA	FIRE ALARM
SF	SQUARE FEET
DEG	DEGREES
F	FAHRENHEIT
OT	ORDINARY TEMPERATURE
IT	INTERMEDIATE TEMPERATURE
HT	HIGH TEMPERATURE
FACP	FIRE ALARM CONTROL PANEL
WP	DENOTES WEATHERPROOF
UON	UNLESS OTHERWISE NOTED
AFF	ABOVE FINISHED FLOOR
BFP	BACKFLOW PREVENTER
DWG	DRAWING
ETR	EXISTING TO REMAIN
EXT	EXTERIOR
FCA	FLOOR CONTROL ASSEMBLY
GPM	GALLONS PER MINUTE
HR	HOUR
NTS	NOT TO SCALE
OS&Y	OUTSIDE SCREW & YOKE
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
QR	QUICK RESPONSE
SPEC	SPECIFICATION
SPK	SPRINKLER
SQ	SQUARE
SR	STANDARD RESPONSE
TEMP	TEMPERATURE
TYP	TYPICAL
VOL	VOLUME
RPDA	REDUCED PRESSURE DETECTOR ASSEMBLY BACKFLOW PREVENTER
NYC	NEW YORK CITY
FDNY	FIRE DEPARTMENT OF THE CITY OF NEW YORK
DEP	NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION
CONT.	CONTINUED

FIRE PROTECTION SCOPE OF WORK - ADD ALTERNATE 1

1. ALL WORK INDICATED ON FIRE PROTECTION DRAWINGS SHALL BE INCLUDED IN ADD ALTERNATE 1 UNLESS OTHERWISE NOTED. BASE BID SCOPE SHALL NOT INCLUDE ANY SPRINKLER WORK, INCLUDING INSTALLATION OF SPRINKLERS, SPRINKLER PIPING, VALVES, OR EQUIPMENT.
   A. PROVIDE ADD ALTERNATE PRICING FOR ALL WORK INDICATED ON THESE FIRE PROTECTION DRAWINGS UNLESS OTHERWISE NOTED. DEMARCATION OF ADD ALTERNATE WORK AREA IS INDICATED ON DRAWINGS F-401 AND F-502.

   B. BASE BID SCOPE INCLUDES A NEW 8" WATER SERVICE UP TO 5 FEET OUTSIDE THE BUILDING (C-CONTRACT SCOPE), AND INSTALLATION OF WATER SERVICE ENTRANCE FROM 5 FEET OUTSIDE THE BUILDING, UNDER EXISTING FOUNDATION, AND UP INTO THE BUILDING (P-CONTRACT SCOPE). BASE BID WORK INCLUDES ALL WORK UPSTREAM OF FLANGE OF 8" WATER SERVICE ENTRANCE AT 12" ABOVE THE BASEMENT SLAB. ADD ALTERNATE 1 SCOPE INCLUDES ALL SPRINKLERS, SPRINKLER PIPING, VALVES, AND EQUIPMENT DOWNSTREAM OF THE FLANGE OF 8" WATER SERVICE ENTRANCE 12" ABOVE THE BASEMENT SLAB.
2. PROVIDE A FIRE SPRINKLER SYSTEM THROUGHOUT THE BUILDING IN ACCORDANCE WITH THE CODES AND STANDARDS LISTED BELOW, AND AS INDICATED ON THE CONTRACT DRAWINGS AND THE CONTRACT SPECIFICATIONS. THE CONTRACT DOCUMENTS ESTABLISH ENGINEERING DESIGN PRECEDENCE.
3. INSTALL THE SYSTEM SO THAT IT IS COMPLIANT WITH THE APPLICABLE CODES AND STANDARDS, INCLUDING THOSE NOTED ON THIS SHEET.
   A. WHERE CONFLICTS OR DISCREPANCIES OCCUR BETWEEN CONTRACT DRAWINGS, SPECIFICATIONS, AND REFERENCED CODES AND STANDARDS, THE MOST STRIGINENT REQUIREMENTS SHALL APPLY TO THE CONTRACT.
4. PROVIDE PRODUCT SUBMITTALS, SHOP DRAWINGS AND HYDRAULIC CALCULATIONS FOR REVIEW AND APPROVAL IN ACCORDANCE WITH NFPA-13. REFER TO THE HYDRAULIC CALCULATIONS NOTES FOR ADDITIONAL INFORMATION. SUBMITTALS AND SHOP DRAWINGS SUBMISSIONS REQUIRING MORE THAN TWO REVIEW CYCLES DUE TO CONTRACTOR'S OR SUB-CONTRACTOR'S OWN ERRORS, OMISSIONS OR INCOMPLETENESS CAUSES ADDITIONAL EFFORTS REQUIRED BY ENGINEER (RAN FIRE PROTECTION ENGINEERING P.C.) THESE ADDITIONAL EFFORTS ARE BACK CHARGEABLE TO AND AT THE SOLE COST OF THE CONTRACTOR AND/OR SUB CONTRACTOR WHO SHALL PAY RAN'S STANDARD HOURLY RATES AS ADDITIONAL SERVICES UNDER RAN'S CONTRACT WITH OWNER/CLIENT.
5. PROVIDE HANGING AND SUPPORT IN ACCORDANCE WITH NFPA-13.
6. PROVIDE SPARE SPRINKLER CABINET, SPARE SPRINKLERS, SPRINKLER WRENCH(S) AND A LIST OF INSTALLED SPRINKLERS IN ACCORDANCE WITH NFPA-13.
7. PROVIDE ACCEPTANCE TESTING OF THE SPRINKLER SYSTEM IN ACCORDANCE WITH NFPA-13 REQUIREMENTS.
8. PROVIDE OPERATION AND MAINTENANCE (O&M) MANUAL UPON COMPLETION OF WORK. O&M MANUAL SHALL CONSIST OF AS-BUILT DRAWINGS, AS-BUILT HYDRAULIC CALCULATIONS, SYSTEM PRODUCT SUBMITTALS, AND INSTALLING CONTRACTOR'S QUALIFICATIONS AND CONTACT INFORMATION. AS-BUILT DRAWINGS SHALL BE AVAILABLE IN PDF AND AUTOCAD FORMATS.

APPLICABLE CODES AND STANDARDS

ALL WORK SHALL COMPLU WITH OSHA AND THE NEW YORK STATE UNIFORM FIRE PREVENTION AND BUILDING CODE, WHICH INCLUDES AND REFERENCES THE FOLLOWING:
1. BCNYS, BUILDING CODE OF NEW YORK STATE, 2020
2. FCNYS, FIRE CODE OF NEW YORK STATE, 2020
3. EBCNYS, EXISTING BUILDING CODE OF NEW YORK STATE, 2020
4. NFPA 13, STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS, 2016
5. NFPA 24, STANDARD FOR THE INSTALLATION OF PRIVATE FIRE SERVICE MAINS AND THEIR APPURTENANCES, 2016
6. NFPA 70, NATIONAL ELECTRIC CODE, 2017
7. NFPA 72, NATIONAL FIRE ALARM AND SIGNALING CODE, 2016

ADDITIONALLY, COMPLY WITH THE FOLLOWING REQUIREMENTS DURING CONSTRUCTION, INCLUDING BUT NOT LIMITED TO:
1. OSHA (OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION)
2. 2020 BCNYS, CHAPTER 33 - SAFEGUARDS DURING CONSTRUCTION
3. 2020 EBCNYS, CHAPTER 15 - CONSTRUCTION SAFEGUARDS
4. 2020 FCNYS, CHAPTER 33, FIRE SAFETY DURING CONSTRUCTION AND DEMOLITION

REFER TO SPECIFICATION SECTION 014100 REGULATORY REQUIREMENTS FOR ADDITIONAL INFORMATION. DEMONSTRATE COMPLIANCE WITH REGULATORY REQUIREMENTS IN THE SITE SPECIFIC SAFETY PLAN REQUIRED PER SPECIFICATION SECTION 011100.

HYDRAULIC CALCULATIONS

1. SUBMIT HYDRAULIC CALCULATIONS FOR REVIEW AND APPROVAL AS DESCRIBED IN THIS SECTION.
2. PERFORM AND WITNESS A HYDRANT FLOW TEST WHICH WILL BE USED FOR CONTRACTOR'S HYDRAULIC CALCULATIONS.
3. REFER TO FLOOR PLANS FOR OCCUPANCY HAZARD CLASSIFICATIONS OF EACH SPACE PER NFPA-13.
4. PERFORM HYDRAULIC CALCULATIONS IN ACCORDANCE WITH NFPA-13 REQUIREMENTS FOR HYDRAULICALLY DESIGNED (DENSITY/AREA METHOD) SPRINKLER SYSTEMS. REFER TO HYDRAULIC DESIGN TABLE BELOW FOR DESIGN CRITERIA.
5. THE SIZE OF THE HYDRAULIC REMOTE AREA IS PERMITTED TO BE REDUCED ON WET PIPE SPRINKLER SYSTEMS PER NFPA-13 REQUIREMENTS WHERE QUICK RESPONSE SPRINKLERS ARE INSTALLED AND THE MAXIMUM CEILING HEIGHT DOES NOT EXCEED 20'-0".
6. DO NOT COMMENCE CONSTRUCTION UNTIL CONTRACTOR'S SHOP DRAWINGS AND HYDRAULIC CALCULATIONS HAVE BEEN APPROVED BY THE ENGINEER IN ACCORDANCE WITH NFPA-13.
7. PROVIDE ADDITIONAL HYDRAULIC CALCULATIONS AS REQUESTED DURING THE SUBMITTAL REVIEW AND INSTALLATION PROCESS.
8. OUTDOOR HOSE ALLOWANCES SHALL BE INCLUDED IN HYDRAULIC CALCULATIONS AT THE POINT OF CONNECTION OF THE BUILDING SPRINKLER WATER SERVICE ENTRANCE MAIN TO THE CITY WATER SUPPLY, OR AT THE LOCATION OF THE NEAREST HYDRANT, WHICHEVER IS CLOSER TO THE SPRINKLER SYSTEM RISER.

FIRE PROTECTION GENERAL NOTES

1. INSTALLATION WORK SHALL NOT PROCEED UNTIL SUBMITTALS HAVE BEEN RECEIVED, PROCESSED AND APPROVED IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DRAWINGS AND THE PROJECTS SPECIFICATIONS.
2. ALL NEW VALVES ON THE FIRE PROTECTION SYSTEM TO BE ELECTRICALLY SUPERVISED. TYPE AND EXACT LOCATION OF FLOW, PRESSURE AND SUPERVISORY SWITCHES SHALL BE ACCOMPLISHED BETWEEN THE DIFFERENT RESPONSIBLE TRADES.
3. PROVIDE MAIN WATER FLOW MONITORING DEVICE ON THE FIRE PROTECTION SIDE OF SERVICE ENTRANCE, PRIOR TO ANY TEE OFFS FOR SYSTEM RISERS, FDC, TEST CONNECTIONS, ETC. CONTRACTOR IS RESPONSIBLE FOR THE ADDITION AND DELETION OF ALL WATER FLOW SWITCHES IN ACCORDANCE WITH APPLICABLE NFPA STANDARDS, AS PART OF THIS CONTRACT BASED ON THE CONTRACTOR'S WORKING DRAWINGS.
4. THE BASE BUILDING "CONTRACT DRAWINGS" AND "SPECIFICATIONS" INCLUDING ALL RESPECTIVE ADDENDA AND BULLETINS SHALL FORM A PART OF THIS WORK, AND ALL WORK SHALL BE SUBJECT TO RESPECTIVE PROVISIONS THEREOF.
5. REFER TO ARCHITECTURAL DRAWINGS FOR HUNG CEILING HEIGHTS AND CONSTRUCTION. WHERE WORK BETWEEN THIS DRAWING AND ARCHITECTURAL PLANS ARE IN CONFLICT, ADVISE PRIOR TO INSTALLATION OF PIPING.
6. COORDINATE WORK WITH ALL OTHER TRADES. NOTIFY DIRECTOR'S REPRESENTATIVE TO AVOID CONFLICTS.
7. ADJUST AND/OR ADD SPRINKLERS AS REQUIRED UTILIZING ARCHITECT'S REFLECTED CEILING PLAN FOR LOCATION OF LIGHTS, DIFFUSERS, CABLE TRAYS, DUCTWORK, ETC.
8. LAYOUT OF SPRINKLERS AND HYDRAULICS CALCULATIONS ARE FOR AUTHORITY HAVING JURISDICTION USE ONLY. PREPARE FINAL SPRINKLER LAYOUT AND SHOP DRAWINGS INCLUDING HYDRAULIC CALCULATIONS AND OBTAIN ALL APPROVALS AS REQUIRED.
9. DO NOT INSTALL ANY SPRINKLER PIPING THAT WILL INTERFERE WITH THE MAINTENANCE/REMOVAL OF HVAC EQUIPMENT.
10. DETERMINE BEST LOCATION FOR ROUTING/RE-ROUTING ALL ASSOCIATED SPRINKLER LINES. PIPE ROUTING SHOWN SHALL BE USED WHERE POSSIBLE, AND ANY ADDITIONAL OFFSETS OR FITTINGS REQUIRED FOR PROPER INSTALLATION, COORDINATION WITH OTHER TRADES, AND/OR TO MAINTAIN PROPER CLEARANCES SHALL BE PROVIDED. VERIFY EXISTING STRUCTURAL, MECHANICAL, ELECTRICAL INSTALLATIONS AND AVOID ANY/ALL OBSTRUCTIONS OR INTERFERENCES WITH FIRE PROTECTION PIPE ROUTING.
11. ALL SPRINKLERS MOUNTED IN CEILING SHALL BE LOCATED A MINIMUM OF 4" AWAY FROM ANY WALLS, CEILING HEIGHT CHANGES OR ANY OTHER VERTICAL INTERSECTING SURFACE.
12. PROVIDE SPRINKLERS ABOVE AND BELOW EXPOSED DUCTWORK OR OTHER OBSTRUCTIONS OVER 4 FEET IN WIDTH. FOR DUCTWORK LOCATED AGAINST WALLS, PROVIDE ADDITIONAL SPRINKLERS AS NEEDED IN ACCORDANCE WITH NFPA-13 REQUIREMENTS FOR OBSTRUCTIONS AGAINST WALLS. PROVIDE HEAD GUARDS WITH WATER SHIELDS FOR ALL SPRINKLERS INSTALLED BELOW EXPOSED DUCTWORK/OBSTRUCTIONS.
13. CUTTING OF STRUCTURAL AND/OR ARCHITECTURAL MEMBERS TO BE DONE ONLY WITH THE WRITTEN APPROVAL OF THE DIRECTOR'S REPRESENTATIVE.
14. FIRE STOP ALL PENETRATIONS OF SMOKE/FIRE WALLS, CEILINGS, FLOORS, ROOFS, ETC.
15. METHODS OF HANGING PIPES, HEADERS AND BRANCHES SHALL BE IN ACCORDANCE WITH NFPA-13.
16. ALL VALVES FOR FIRE SERVICE SHALL BE LISTED BY THE UNDERWRITER'S LABORATORIES, INC. AND THE FACTORY MUTUAL LABORATORIES. VALVES SHALL BE FACTORY MARKED "UL" AND "FM", 175 PSI WORKING PRESSURE.
17. ALL SPRINKLER SYSTEM MONITORING DEVICES FURNISHED AND INSTALLED BY P-CONTRACTOR. WIRING AND PROGRAMMING BY E-CONTRACTOR.
18. SPRINKLERS SHALL COVER THE ENTIRE AREA OF THE ROOM INCLUDING ALCOVES. SPRAY SHALL NOT BE BLOCKED BY WALLS OR PARTITIONS.
19. MAINTAIN A MINIMUM OF 18 INCHES FROM THE BOTTOM OF THE SPRINKLER DEFLECTOR TO THE TOP OF STORAGE/FILE STORAGE.
20. ALL FIRE PROTECTION SYSTEMS ARE SHOWN SCHEMATICALLY. IT IS NOT THE INTENT OF THESE PLANS TO SHOW ALL LISTED COMPONENTS, SUCH AS PIPING, FITTINGS, VALVES, ETC. CONTRACTOR IS RESPONSIBLE FOR INSTALLING SYSTEM PER APPLICABLE CODES.
21. PROVIDE A PERMANENTLY ATTACHED HYDRAULIC DESIGN INFORMATION SIGN STATING THE REQUIRED DESIGN CRITERIA FOR EACH HYDRAULICALLY DESIGNED SYSTEM.
22. INSPECTOR'S TEST VALVE SHALL NOT EXCEED 7 FEET ABOVE THE FINISHED FLOOR.
23. PROVIDE ADEQUATE DRAINAGE FOR THE ENTIRE SPRINKLER SYSTEM AS REQUIRED BY NFPA-13, COORDINATED WITH ALL APPLICABLE BUILDING SYSTEMS. PROVIDE LOW POINT AND AUXILIARY DRAINS FOR ALL TRAPPED PIPE PER NFPA-13 REQUIREMENTS.
24. PIPE ALL AUTO BALL DRIPS TO EXTERIOR WITH GALVANIZED PIPING.

FIRE PROTECTION SPRINKLER SYSTEM DESIGN CRITERIA

HAZARD CLASSIFICATION	SYSTEM TYPE	DENSITY GPM/SF	REMOTE AREA SQ FT	MAXIMUM AREA PER SPRINKLER SQ FT	HOSE DEMAND GPM	SPRINKLER CHARACTERISTICS				ADDITIONAL CODE REFERENCE	NOTES
						TEMP RATING	TYPE	K-FACTOR	FINISH		
LIGHT HAZARD	WET	0.10	1500	225	100	INTERMEDIATE	SEE NOTES	5.6 OR 8.0	SEE NOTES		1,2,3,4
ORDINARY HAZARD 1	WET	0.15	1500	130	250	INTERMEDIATE	SEE NOTES	5.6 OR 8.0	SEE NOTES		1,2,3,4
ORDINARY HAZARD 2	WET	0.20	3500	130	250	INTERMEDIATE	SEE NOTES	5.6 OR 8.0	SEE NOTES		1,2,3,4

NOTE 1: WHERE CEILINGS ARE NOT PROVIDED, USE QUICK-RESPONSE BRASS UPRIGHT SPRINKLERS.
NOTE 2: WHERE CEILINGS ARE PRESENT, USE WHITE QUICK-RESPONSE CONCEALED SPRINKLERS.
NOTE 3: PROVIDE LISTED GUARDS AND WATER SHIELDS ON ALL SPRINKLERS INSTALLED BELOW OBSTRUCTIONS.
NOTE 4: WHERE REQUIRED BY NFPA 13 PROVIDE HIGHER TEMPERATURE RATED SPRINKLERS.

NEW YORK STATE OF OPPORTUNITY. Office of General Services
DESIGN & CONSTRUCTION

CONSULTANT
BCA ARCHITECTS ENGINEERS
RAN FIRE PROTECTION ENGINEERING
CERTIFICATE OF AUTHORIZATION #: 0017726

BUILDING CODE COMPLIANCE:

COMPLIANCE STATEMENT:

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STATE OF NEW YORK — DOUGLAS RAYMOND FINDLAY — 079487 — LICENSED PROFESSIONAL ENGINEER
6/25/2025
REGISTRATION EXPIRES: 7/31/2026

CONTRACT:
PLUMBING

TITLE:
RENOVATE INTERIOR SPACES
WHITESTONE ARMORY

LOCATION:
STATE ARMORY
150-74 6TH AVE, WHITESTONE, NY.

CLIENT:
NYS DIVISION OF MILITARY AND NAVAL AFFAIRS

MARK	DATE	DESCRIPTION
2	06/27/2025	ADDENDUM 02
	05/20/2025	BID DOCUMENTS

PROJECT NUMBER:	47592 – P
DESIGNED BY:	SPF
DRAWN BY:	SPF
FIELD CHECK:	SPF
APPROVED:	DRN

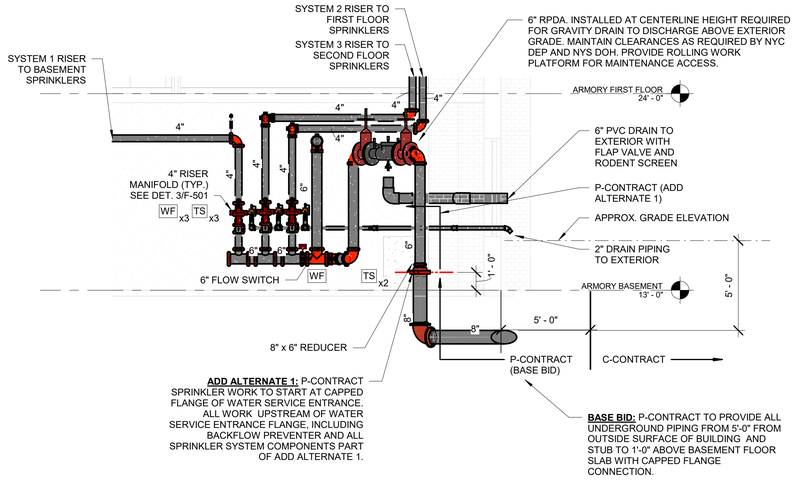
SHEET TITLE:
FIRE PROTECTION NOTES AND SYMBOLS

DRAWING NUMBER:
F-001

SHEET 60 OF 94

24 x 36

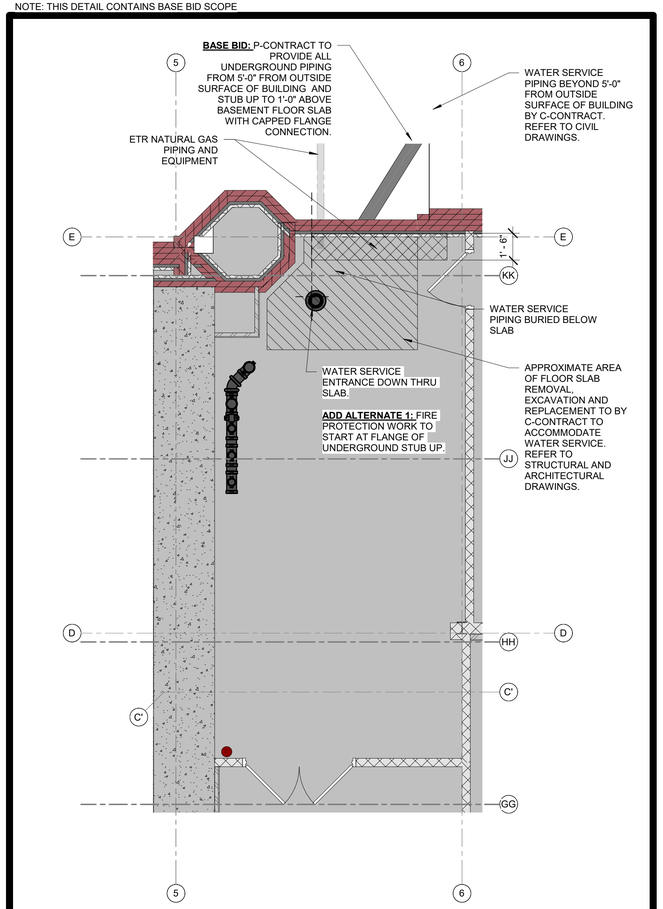
NOTE: THIS DETAIL CONTAINS BASE BID SCOPE



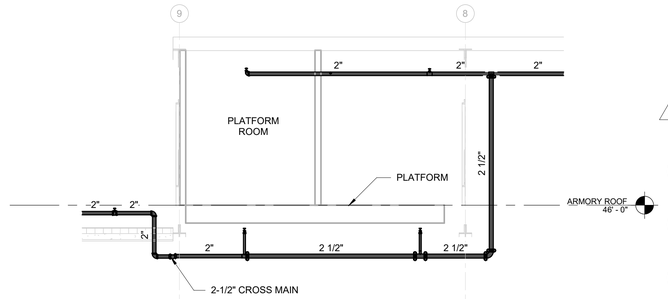
NOTE: THE FIRE PROTECTION CONTRACTOR SHALL OBTAIN ALL APPROVALS FOR THE COMPLETE INSTALLATION OF THE BACKFLOW PREVENTION DEVICE INCLUDING BUT NOT LIMITED TO STATE DEPARTMENT OF HEALTH AND NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION APPROVAL.

1 FIRE PROTECTION WATER SERVICE ENTRANCE ELEVATION
SCALE: 1/4" = 1'-0"

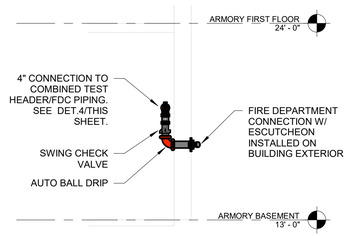
NOTE: THIS DETAIL CONTAINS BASE BID SCOPE



3 MECHANICAL B-38 WATER ENTRANCE COORDINATION PLAN
SCALE: 1/4" = 1'-0"

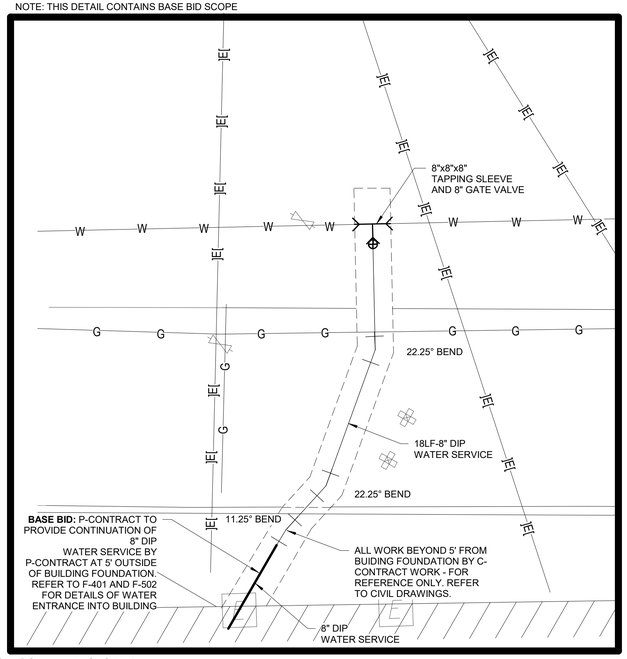


6 PLATFORM SPRINKLER LAYOUT
SCALE: 1/4" = 1'-0"



5 MECHANICAL B-38 - 6TH AVE FDC
SCALE: 1/4" = 1'-0"

NOTE: THIS DETAIL CONTAINS BASE BID SCOPE

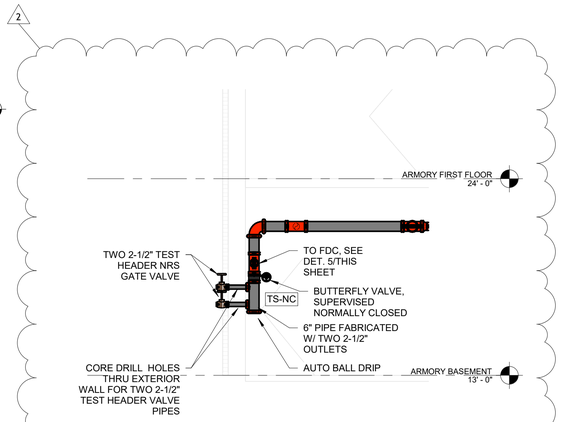


7 SITE UTILITY PLAN
SCALE:NOT TO SCALE

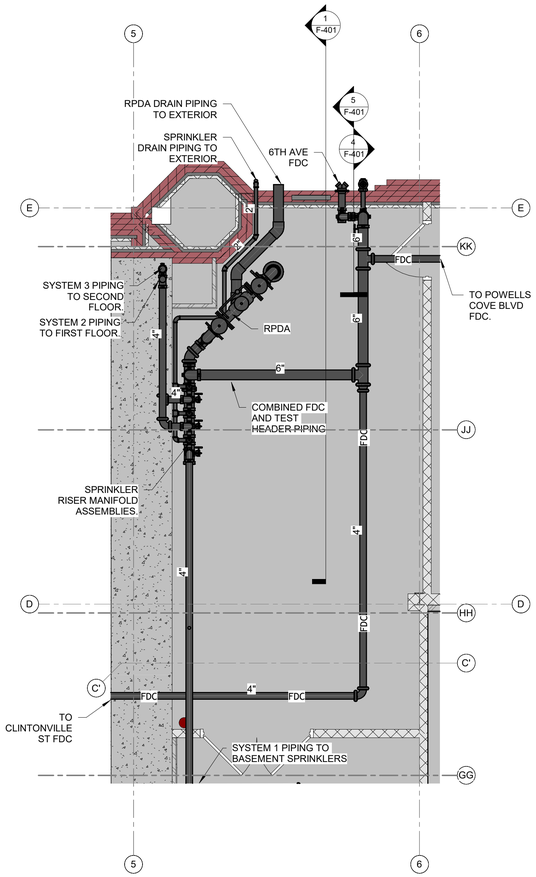
ADD ALTERNATE 1:

SPRINKLER WORK INDICATED ON THIS SHEET IS INCLUDED IN ADD ALTERNATE 1, EXCEPT WHERE DETAILS ARE OUTLINED AND NOTED TO INCLUDE BASE BID SCOPE.

OUTLINED DETAILS BELOW INCLUDE BASE BID SCOPE WHERE INDICATED, AND MAY SHOW DELINEATION OF BASE-BID AND ADD-ALTERNATE SCOPE.



4 BACKFLOW PREVENTER TEST HEADER
SCALE: 1/4" = 1'-0"



2 MECHANICAL B-38 ENLARGED FIRE PROTECTION PLAN
SCALE: 1/4" = 1'-0"

24 x 36

NEW YORK STATE OF OPPORTUNITY. Office of General Services

DESIGN & CONSTRUCTION

CONSULTANT

BCA ARCHITECTS ENGINEERS

RAN FIRE PROTECTION ENGINEERING

CERTIFICATE OF AUTHORIZATION #: 0017726

BUILDING CODE COMPLIANCE:

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STATE OF NEW YORK · DOUGLAS RAYMOND MARSHALL · 079487 · LICENSED PROFESSIONAL ENGINEER

6/25/2025

REGISTRATION EXPIRES: 7/31/2026

CONTRACT:

PLUMBING

TITLE:

RENOVATE INTERIOR SPACES
WHITESTONE ARMORY

LOCATION:

STATE ARMORY
150-74 6TH AVE, WHITESTONE, NY.

CLIENT:

NYS DIVISION OF MILITARY AND NAVAL AFFAIRS

MARK	DATE	DESCRIPTION
2	06/27/2025	ADDENDUM 02
	05/20/2025	BID DOCUMENTS

PROJECT NUMBER:	47592 – P
DESIGNED BY:	SPF
DRAWN BY:	SPF
FIELD CHECK:	SPF
APPROVED:	DRN

SHEET TITLE:

FIRE PROTECTION ELEVATIONS AND ENLARGED PLANS

DRAWING NUMBER:

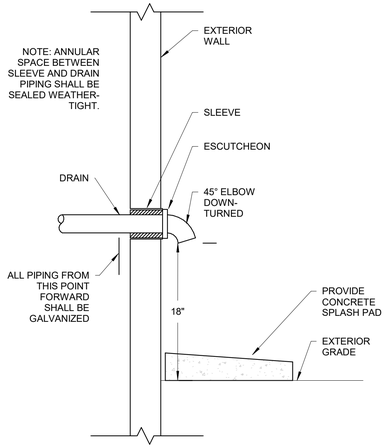
F-401

SHEET 66 OF 94

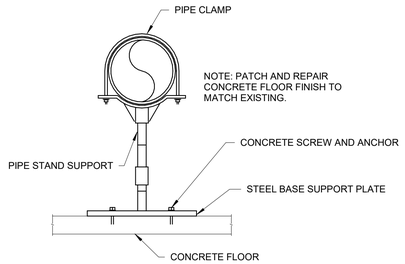
ADD ALTERNATE 1:

ALL WORK INDICATED ON THIS SHEET IS INCLUDED IN ADD ALTERNATE 1.

NO BASE BID WORK INDICATED ON THIS SHEET.



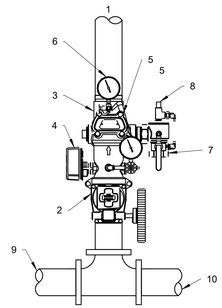
1 DRAIN THROUGH WALL DETAIL
SCALE:NOT TO SCALE



2 PIPE STAND DETAIL
SCALE:NOT TO SCALE

UNIVERSAL MANIFOLD CHECK:

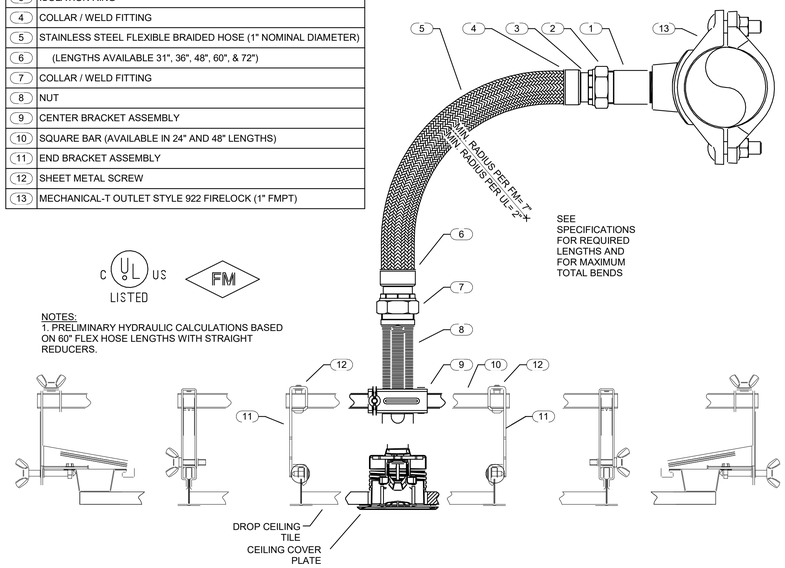
1. CAN BE MOUNTED IN THE HORIZONTAL OR VERTICAL UPFLOW POSITION.
2. REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR ADDITIONAL INFORMATION.
3. PIPE TEST AND DRAIN PIPING TO BUILDING EXTERIOR OR NEAREST FLOOR DRAIN CAPABLE OF DRAINING AT LEAST 40 GPM FLOW.



PRODUCT LEGEND:	
1	SPRINKLER RISER.
2	BUTTERFLY VALVE W/ SUPERVISORY SWITCH.
3	UNIVERSAL MANIFOLD WITH CHECK VALVE.
4	FLOW SWITCH.
5	CHECK VALVE.
6	PRESSURE GAUGE.
7	TEST & DRAIN VALVE.
8	ADJUSTABLE PRESSURE RELIEF VALVE.
9	FROM WATER ENTRANCE OR PREVIOUS RISER.
10	TO NEXT RISER OR CAP.

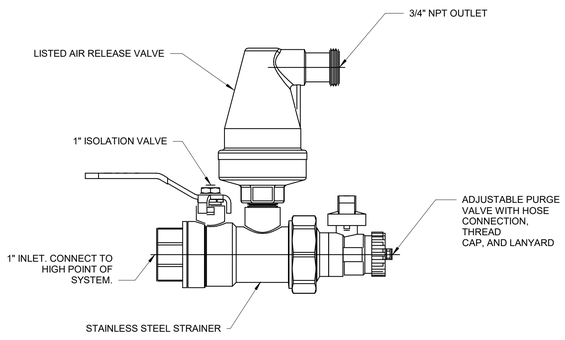
3 RISER MANIFOLD
SCALE:NOT TO SCALE

PRODUCT LEGEND	
1	INLET NIPPLE (1"MPT)
2	NUT
3	ISOLATION RING
4	COLLAR / WELD FITTING
5	STAINLESS STEEL FLEXIBLE BRAIDED HOSE (1" NOMINAL DIAMETER)
6	(LENGTHS AVAILABLE 31", 36", 48", 60", & 72")
7	COLLAR / WELD FITTING
8	NUT
9	CENTER BRACKET ASSEMBLY
10	SQUARE BAR (AVAILABLE IN 24" AND 48" LENGTHS)
11	END BRACKET ASSEMBLY
12	SHEET METAL SCREW
13	MECHANICAL-T OUTLET STYLE 922 FIRELOCK (1" FMPT)



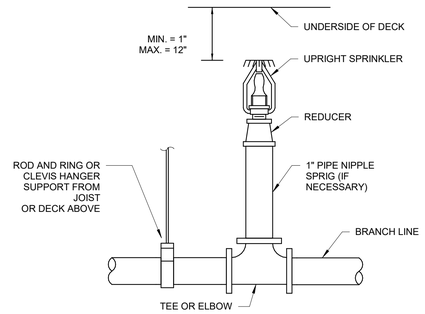
NOTES:
1. PRELIMINARY HYDRAULIC CALCULATIONS BASED ON 60" FLEX HOSE LENGTHS WITH STRAIGHT REDUCERS.

4 FLEX HEAD DETAIL
SCALE:NOT TO SCALE



AIR VENT NOTES:
1. CONNECT TO SYSTEM IN THE FOLLOWING LOCATIONS:
   A. HIGH POINT OF EACH WET PIPE SPRINKLER SYSTEM AT THE END OF REMOTE MAIN OR BRANCH LINE.
   B. TOP OF ALL WET PIPE SUPPLY RISERS FOR RISERS SERVING MULTIPLE FLOORS OR ELEVATIONS.
2. BASIS OF DESIGN AIR VENT: AGF MANUFACTURING M7900AAV

5 WET SYSTEM AIR VENT DETAIL
SCALE:NOT TO SCALE



6 TYPICAL UPRIGHT SPRINKLER INSTALLATION
SCALE:NOT TO SCALE

NEW YORK STATE OF OPPORTUNITY. | Office of General Services

DESIGN & CONSTRUCTION

CONSULTANT

BCA ARCHITECTS ENGINEERS

RAN FIRE PROTECTION ENGINEERING

CERTIFICATE OF AUTHORIZATION #: 0017726

BUILDING CODE COMPLIANCE:

COMPLIANCE STATEMENT:

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ENERGY CODE COMPLIANCE:

COMPLIANCE STATEMENT:

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STATE OF NEW YORK · CHRISTOPHER DOUGLAS RAYMOND · 079487 · LICENSED PROFESSIONAL ENGINEER

6/25/2025

REGISTRATION EXPIRES: 7/31/2026

CONTRACT:

PLUMBING

TITLE:

RENOVATE INTERIOR SPACES
WHITESTONE ARMORY

LOCATION:

STATE ARMORY
150-74 6TH AVE, WHITESTONE, NY.

CLIENT:

NYS DIVISION OF MILITARY AND NAVAL AFFAIRS

MARK	DATE	DESCRIPTION
2	06/27/2025	ADDENDUM 02
	05/20/2025	BID DOCUMENTS

PROJECT NUMBER:	47592 – P
DESIGNED BY:	SPF
DRAWN BY:	SPF
FIELD CHECK:	SPF
APPROVED:	DRN

SHEET TITLE:

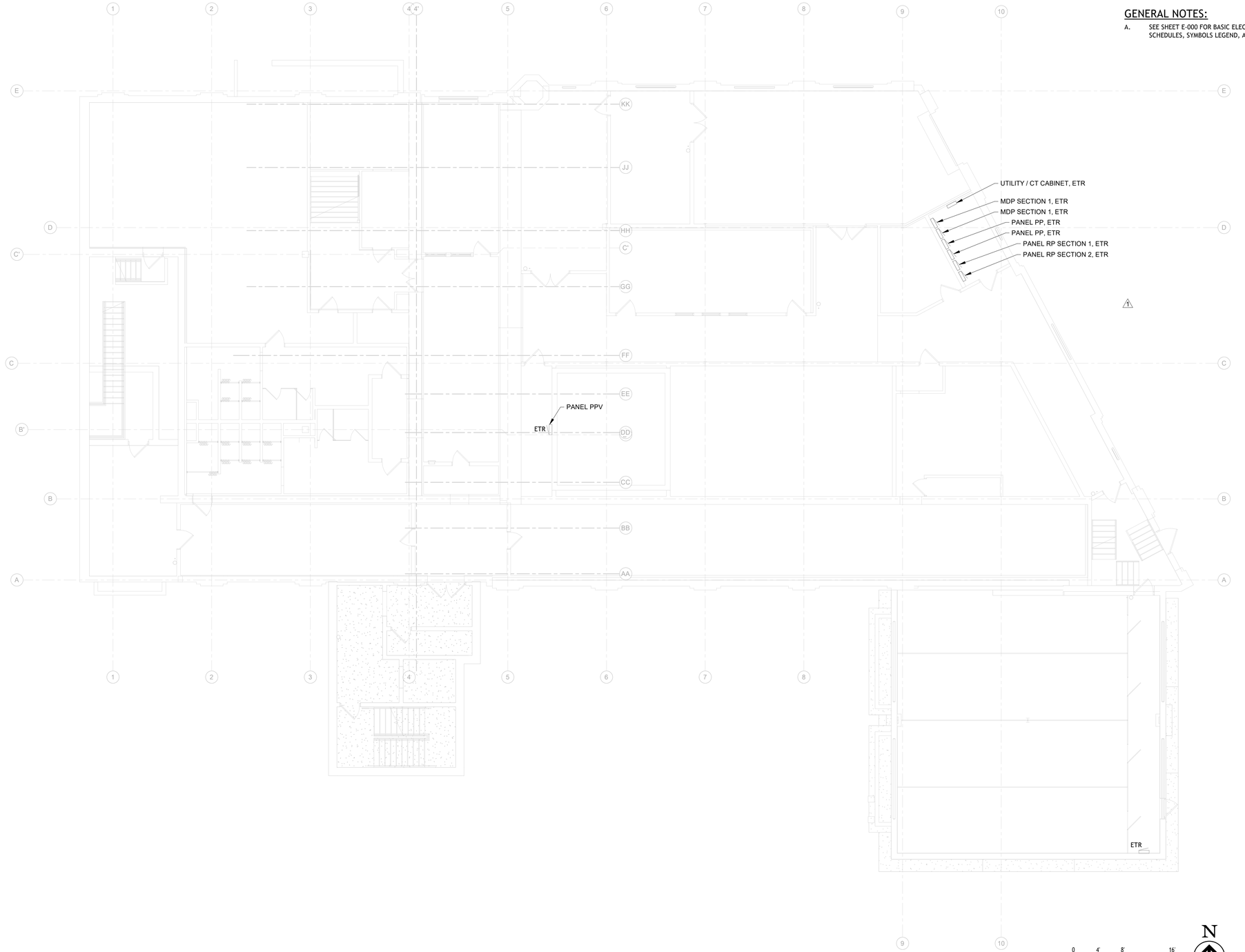
FIRE PROTECTION DETAILS

DRAWING NUMBER:

F-501

SHEET 67 OF 94

24 x 36

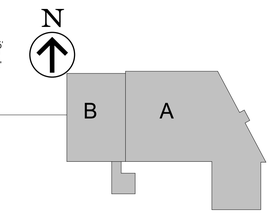


GENERAL NOTES:

A. SEE SHEET E-000 FOR BASIC ELECTRICAL REQUIREMENTS, SCHEDULES, SYMBOLS LEGEND, AND ABBREVIATIONS

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

0 4' 8' 16'
0 2"
1/8" = 1'-0"



KEY PLAN

24 x 36

Office of General Services

CONSULTANT

CERTIFICATE OF AUTHORIZATION No.: 0022724

BCA ARCHITECTS ENGINEERS

CABEZAS ENGINEERING, PLLC
New York State Certified MBE Firm
Mechanical, Electrical and Plumbing Engineering

BUILDING CODE COMPLIANCE:

COMPLIANCE STATEMENT:

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COMPLIANCE STATEMENT:

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STATE OF NEW YORK · EDWARD J. CABEZAS · 099078 · LICENSED PROFESSIONAL ENGINEER

REGISTRATION EXPIRES: 8/31/2026

CONTRACT:

ELECTRICAL

TITLE:

RENOVATE INTERIOR SPACES

LOCATION:

STATE ARMORY
150-74 6TH AVE
WHITESTONE, NY

CLIENT:

NYS DIVISION OF MILITARY AND NAVAL AFFAIRS

MARK	DATE	DESCRIPTION
2	6/25/25	BID ADDENDUM 2
1	6/12/25	BID ADDENDUM 1
	5/20/25	BID DOCUMENTS

PROJECT NUMBER: 47592 – E

DESIGNED BY:	JLE
DRAWN BY:	HNC
FIELD CHECK:	
APPROVED:	HJC

SHEET TITLE:

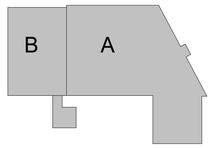
Basement - Demolition

DRAWING NUMBER:

ED-100

SHEET 70 OF 94

1 FIRST FLOOR - DEMOLITION
SCALE: 1/8" = 1'-0"



KEY PLAN

GENERAL NOTES:

A. SEE SHEET E-000 FOR BASIC ELECTRICAL REQUIREMENTS, SCHEDULES, SYMBOLS LEGEND, AND ABBREVIATIONS

KEYED REMOVAL NOTES, THIS SHEET:

R1 PRIOR TO START OF DEMOLITION WORK, TRACE AND IDENTIFY ALL LOADS SERVED FROM PANEL. RECORD FINDINGS FOR FUTURE USE. IDENTIFY CIRCUITS TO REMAIN AS TO LOADS SERVED. DISCONNECT AND REMOVE CONDUCTORS BACK TO OUTSIDE OF DEMOLITION WORK AREA TO ALLOW FOR PANEL REMOVAL. DISCONNECT AND REMOVE PANEL, PANEL FEEDER, BRANCH CIRCUITRY, AND ASSOCIATED COMPNENETS COMPLETE TO SOURCE, UNO. PREPARE CIRCUITS TO REMAIN FOR EXTENSION TO NEW PANEL 1P1.

R2 DISCONNECT AND REMOVE POWER CIRCUITRY CONNECTIONS AND ASSOCIATED COMPONENTS SERVING MECHANICAL UNIT SHOWN, COMPLETE TO SOURCE. MECHANICAL UNIT REMOVAL BY H-CONTRACT. AMEND PANEL DIRECTORY, TO INDICATE UNUSED BREAKERS AS "SPARE".

R3 DISCONNECT AND REMOVE LIGHTING FIXTURES, FIXTURE CIRCUITRY, CONTROLS, AND CONTROL CIRCUITRY THIS SPACE. REMOVE LIGHTING HOME RUN CIRCUITRY COMPLETE TO SOURCE OR BACK TO NEXT JUNCTION BOX SERVING ADJACENT TO REMAIN SPACE.

R4 DISCONNECT AND REMOVE CCTV CAMERA, CTV CABLING, HARDWARE, ELECTRONICS, AND ASSOCIATED COMPONENTS COMPLETE TO SOURCE.

2

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CONSULTANT

CERTIFICATE OF AUTHORIZATION No.: 0022724

BCA ARCHITECTS ENGINEERS

CABEZAS ENGINEERING, PLLC
New York State Certified MBE Firm
Mechanical, Electrical and Plumbing Engineering

BUILDING CODE COMPLIANCE:

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STATE OF NEW YORK · EDWARD J CABEZAS · 059 107 · LICENSED PROFESSIONAL ENGINEER

REGISTRATION EXPIRES: 8/31/2026

CONTRACT:
ELECTRICAL

TITLE:
RENOVATE INTERIOR SPACES

LOCATION:
STATE ARMORY
150-74 6TH AVE
WHITESTONE, NY

CLIENT:
NYS DIVISION OF MILITARY AND NAVAL AFFAIRS

MARK	DATE	DESCRIPTION
2	6/25/25	BID ADDENDUM 2
1	6/12/25	BID ADDENDUM 1
	5/20/25	BID DOCUMENTS

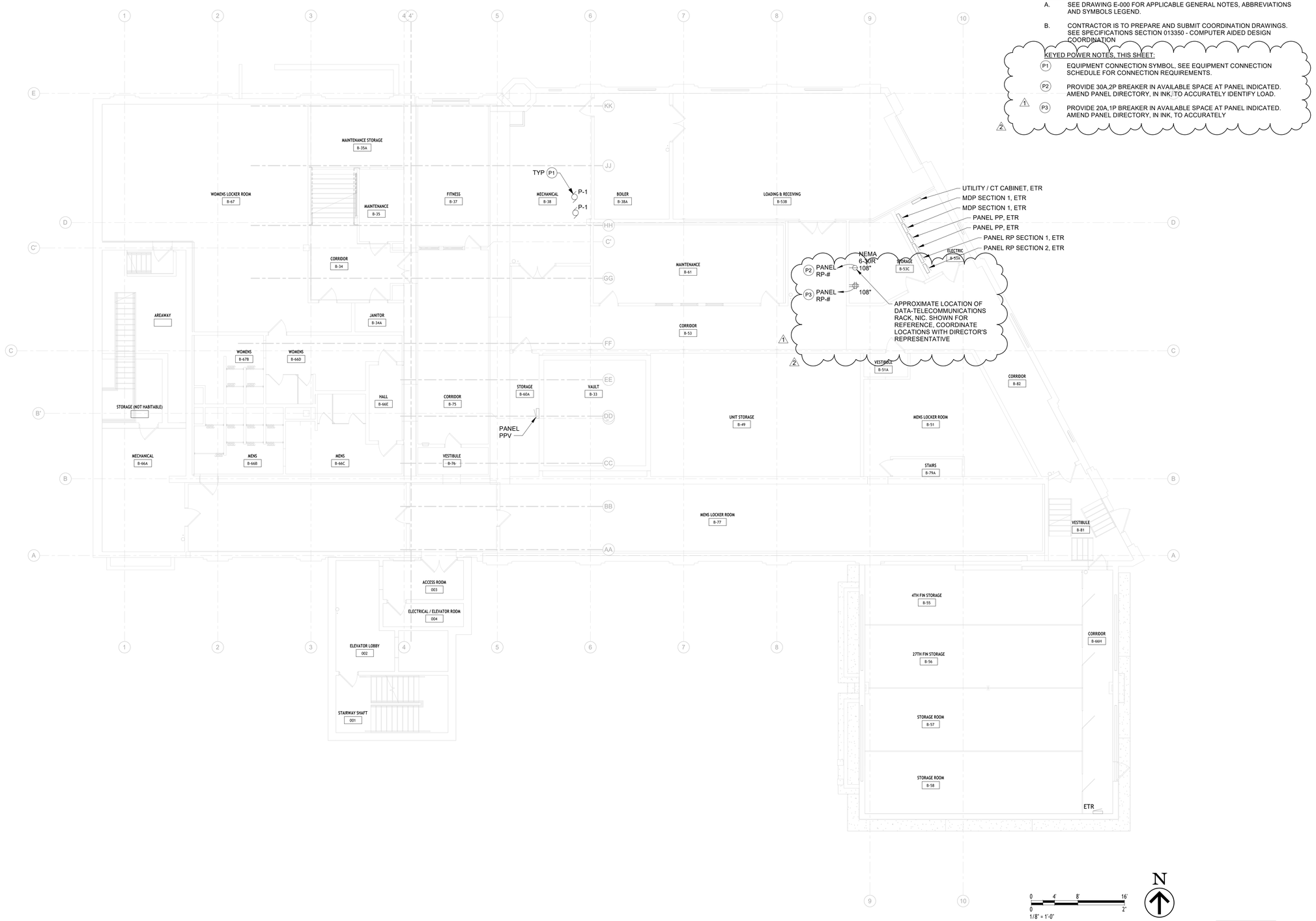
PROJECT NUMBER:	47592 – E
DESIGNED BY:	JLE
DRAWN BY:	HNC
FIELD CHECK:	
APPROVED:	HJC

SHEET TITLE:
First Floor - Demolition

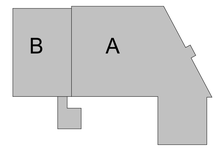
DRAWING NUMBER:
ED-101

SHEET 71 OF 94

24 x 36



1 BASEMENT - POWER PLAN
SCALE: 1/8" = 1'-0"



KEY PLAN

24 x 36

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BCA ARCHITECTS ENGINEERS

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STATE OF NEW YORK · EDWARD J. CABEZAS · 059 10778 · LICENSED PROFESSIONAL ENGINEER

REGISTRATION EXPIRES: 8/31/2026

CONTRACT:

ELECTRICAL

TITLE:

RENOVATE INTERIOR SPACES

LOCATION:

STATE ARMORY
150-74 6TH AVE
WHITESTONE, NY

CLIENT:

NYS DIVISION OF MILITARY AND NAVAL AFFAIRS

MARK	DATE	DESCRIPTION
2	6/25/25	BID ADDENDUM 2
1	6/12/25	BID ADDENDUM 1
	5/20/25	BID DOCUMENTS

PROJECT NUMBER:	47592 – E
DESIGNED BY:	JLE
DRAWN BY:	HNC
FIELD CHECK:	
APPROVED:	HJC

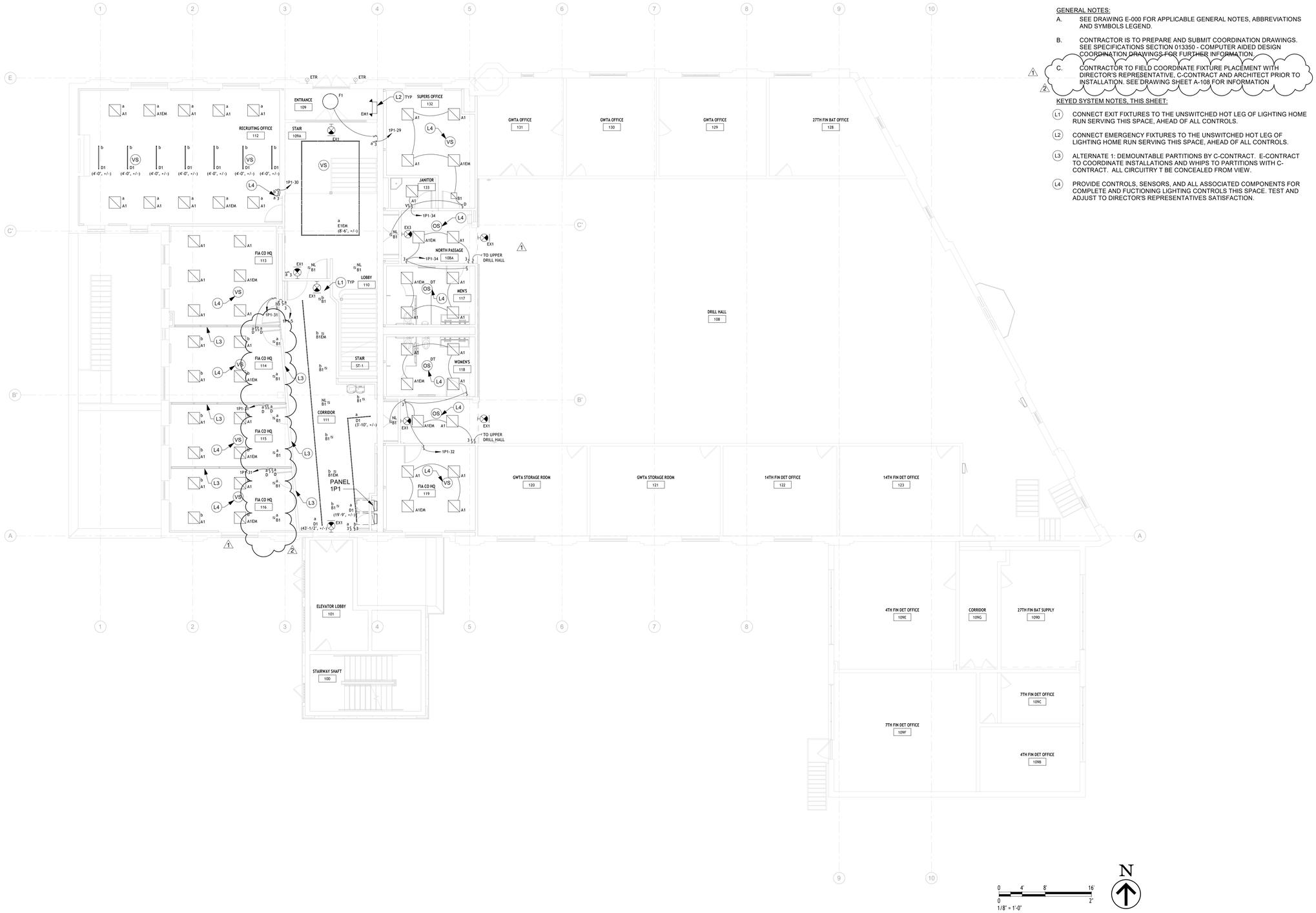
SHEET TITLE:

Basement - Power Plans

DRAWING NUMBER:

E-100

SHEET 73 OF 94



1 FIRST FLOOR - LIGHTING
SCALE: 1/8" = 1'-0"

24 x 36

GENERAL NOTES:

A. SEE DRAWING E-000 FOR APPLICABLE GENERAL NOTES, ABBREVIATIONS AND SYMBOLS LEGEND.

B. CONTRACTOR IS TO PREPARE AND SUBMIT COORDINATION DRAWINGS. SEE SPECIFICATIONS SECTION 013350 - COMPUTER AIDED DESIGN COORDINATION DRAWINGS FOR FURTHER INFORMATION.

C. CONTRACTOR TO FIELD COORDINATE FIXTURE PLACEMENT WITH DIRECTOR'S REPRESENTATIVE, C-CONTRACT AND ARCHITECT PRIOR TO INSTALLATION. SEE DRAWING SHEET A-108 FOR INFORMATION

KEYED SYSTEM NOTES, THIS SHEET:

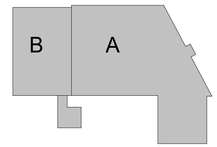
(L1) CONNECT EXIT FIXTURES TO THE UNSWITCHED HOT LEG OF LIGHTING HOME RUN SERVING THIS SPACE, AHEAD OF ALL CONTROLS.

(L2) CONNECT EMERGENCY FIXTURES TO THE UNSWITCHED HOT LEG OF LIGHTING HOME RUN SERVING THIS SPACE, AHEAD OF ALL CONTROLS.

(L3) ALTERNATE 1: DEMOUNTABLE PARTITIONS BY C-CONTRACT. E-CONTRACT TO COORDINATE INSTALLATIONS AND WHIPS TO PARTITIONS WITH C-CONTRACT. ALL CIRCUITRY T BE CONCEALED FROM VIEW.

(L4) PROVIDE CONTROLS, SENSORS, AND ALL ASSOCIATED COMPONENTS FOR COMPLETE AND FUCTIONING LIGHTING CONTROLS THIS SPACE. TEST AND ADJUST TO DIRECTOR'S REPRESENTATIVES SATISFACTION.

KEY PLAN



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CONSULTANT

CERTIFICATE OF AUTHORIZATION No.: 0022724

BCA ARCHITECTS ENGINEERS

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New York State Certified MBE Firm
Mechanical, Electrical and Plumbing Engineering

BUILDING CODE COMPLIANCE:

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REGISTRATION EXPIRES: 8/31/2026

CONTRACT:

ELECTRICAL

TITLE:

RENOVATE INTERIOR SPACES

LOCATION:

STATE ARMORY
150-74 6TH AVE
WHITESTONE, NY

CLIENT:

NYS DIVISION OF MILITARY AND NAVAL AFFAIRS

MARK	DATE	DESCRIPTION
2	6/25/25	BID ADDENDUM 2
1	6/12/25	BID ADDENDUM 1
	5/20/25	BID DOCUMENTS

PROJECT NUMBER:	47592 – E
DESIGNED BY:	JLE
DRAWN BY:	HNC
FIELD CHECK:	
APPROVED:	HJC

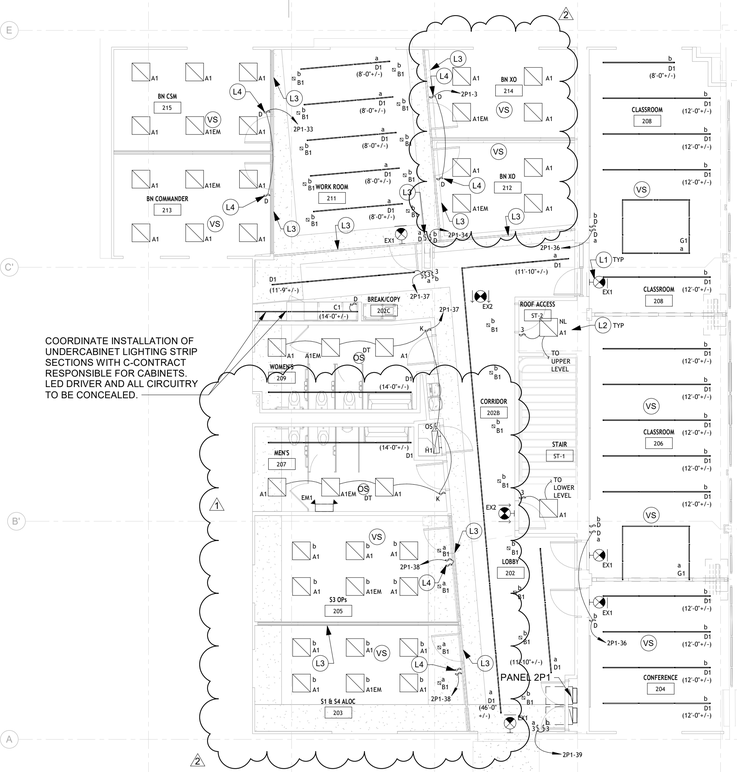
SHEET TITLE:

First Floor - Lighting Plans

DRAWING NUMBER:

E-301

SHEET 79 OF 94



COORDINATE INSTALLATION OF UNDERCABINET LIGHTING STRIP SECTIONS WITH C-CONTRACT RESPONSIBLE FOR CABINETS. LED DRIVER AND ALL CIRCUITRY TO BE CONCEALED.

GENERAL NOTES:

A. SEE DRAWING E-000 FOR APPLICABLE GENERAL NOTES, ABBREVIATIONS AND SYMBOLS LEGEND.

B. CONTRACTOR IS TO PREPARE AND SUBMIT COORDINATION DRAWINGS. SEE SPECIFICATIONS SECTION 013350 - COMPUTER AIDED DESIGN COORDINATION DRAWINGS FOR FURTHER INFORMATION.

C. CONTRACTOR TO FIELD COORDINATE FIXTURE PLACEMENT WITH DIRECTOR'S REPRESENTATIVE, C-CONTRACT AND ARCHITECT PRIOR TO INSTALLATION. SEE DRAWING SHEET A-109 FOR INFORMATION.

KEYED SYSTEM NOTES, THIS SHEET:

L1 CONNECT EXIT FIXTURES TO THE UNSWITCHED HOT LEG OF LIGHTING HOME RUN SERVING THIS SPACE, AHEAD OF ALL CONTROLS.

L2 CONNECT EMERGENCY FIXTURES TO THE UNSWITCHED HOT LEG OF LIGHTING HOME RUN SERVING THIS SPACE, AHEAD OF ALL CONTROLS.

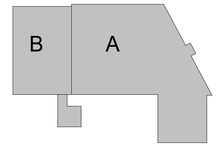
L3 ALTERNATE 1: DEMOUNTABLE PARTITIONS BY C-CONTRACT. E-CONTRACT TO COORDINATE INSTALLATIONS AND WHIPS TO PARTITIONS WITH C-CONTRACT. ALL CIRCUITRY T BE CONCEALED FROM VIEW.

L4 PROVIDE CONTROLS, SENSORS, AND ALL ASSOCIATED COMPONENTS FOR COMPLETE AND FINCTIONING LIGHTING CONTROLS THIS SPACE. TEST AND ADJUST TO DIRECTOR'S REPRESENTATIVES SATISFACTION.

0 4' 8' 16'
0 2"
1/8" = 1'-0"

N

1 SECOND FLOOR - LIGHTING
SCALE: 1/8" = 1'-0"



KEY PLAN

24 x 36

NEW YORK STATE | Office of General Services

CONSULTANT

CERTIFICATE OF AUTHORIZATION No.: 0022724

BCA ARCHITECTS ENGINEERS

CABEZAS ENGINEERING, PLLC
New York State Certified MBE Firm
Mechanical, Electrical and Plumbing Engineering

BUILDING CODE COMPLIANCE:

COMPLIANCE STATEMENT:

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STATE OF NEW YORK · EDWARD J CABEZAS · 059 107 78 · LICENSED PROFESSIONAL ENGINEER

REGISTRATION EXPIRES: 8/31/2026

CONTRACT:

ELECTRICAL

TITLE:

RENOVATE INTERIOR SPACES

LOCATION:

STATE ARMORY
150-74 6TH AVE
WHITESTONE, NY

CLIENT:

NYS DIVISION OF MILITARY AND NAVAL AFFAIRS

MARK	DATE	DESCRIPTION
2	6/25/25	BID ADDENDUM 2
1	6/12/25	BID ADDENDUM 1
	5/20/25	BID DOCUMENTS

PROJECT NUMBER:	47592 – E
DESIGNED BY:	JLE
DRAWN BY:	HNC
FIELD CHECK:	
APPROVED:	HJC

SHEET TITLE:

Second Floor - Lighting Plans

DRAWING NUMBER:

E-302

SHEET 80 OF 94

CONDUCTOR AND CONDUIT SCHEDULE

OVER-CURRENT PROTECTION	PHASE AND/OR NEUTRAL CONDUCTORS	GROUND CONDUCTOR	CONDUIT
THREE POLE CIRCUITS			
50A/3P	#6	#10	1" C
40A/3P	#8	#10	1" C
30A/3P	#10	#10	3/4" C
20A/3P	#12	#12	3/4" C
15A/3P	#12	#12	3/4" C
TWO POLE CIRCUITS			
50A/2P	#6	#10	1" C
40A/2P	#8	#10	3/4" C
30A/2P	#10	#10	3/4" C
20A/2P	#12	#12	3/4" C
15A/2P	#12	#12	3/4" C
ONE POLE CIRCUITS			
40A/1P	#8	#10	3/4" C
30A/1P	#10	#10	3/4" C
20A/1P	#12	#12	3/4" C
15A/1P	#12	#12	3/4" C

A. USE THIS SCHEDULE AS FOLLOWS:
-FOR ALL RECEPTACLE AND LIGHTING CIRCUITS.
-WHERE SPECIFIC CONDUCTOR/CONDUIT SIZING IS NOT INDICATED ELSEWHERE ON PLANS
-FOR ANY BRANCH CIRCUITS THAT ARE REQUIRED TO BE RELOCATED EXTENDED, ETC.

B. DO NOT USE THIS SCHEDULE AS FOLLOWS
-FOR LARGE MECHANICAL LOADS (REFER TO EQUIPEMNT CONNECTION SCHEDULES).
-FOR SERVICE ENTRANCE CONDUCTORS
-WHERE SPECIFIC CONDUCTORS/CIRCUIT IS INDICATED ON DRAWINGS.

C. WHERE CIRCUIT LENGTH EXCEEDS 200LF, CONTRACTOR SHALL ADJUST PHASE/NEUTRAL CONDUCTOR SIZE TO COMPENSATE FOR VOLTAGE DROP. ALLOW FOR NO MORE THAN 3% VOLTAGE DROP ALONG LENGTH OF CONDUCTORS

D. SCHEDULE BASED ON COPPER CONDUCTORS.

FIRESTOPPING SCHEDULE

PENETRATION	UL SYSTEM NUMBER	SYSTEM TYPE
ONE METALLIC CONDUIT UP TO 4 INCHES IN DIAMETER WITH ANNULAR SPACE BETWEEN CONDUIT AND OPENING OF 0 TO 2-1/8" INCHES	C-AJ-1402	FIRE CAULK
MULTIPLE CONDUITS AND CABLES IN EXISTING PENETRATIONS UP TO 60" X 24"	C-AJ-8133	FIRE RATED MORTAR
SINGLE OR MULTIPLE ELECTRIC CABLES	C-AJ-3199	FIRE CAULK
TEMPORARY CABLING AND CABLE TRAY ABOVE SWITCHGEAR ROOM DOORWAY	W-J-4025	PILLOWS AND SEALANT

1) FIRESTOP ELECTRIC RACEWAY THROUGH FIRE RATED ASSEMBLIES PER THIS SCHEDULE. COMPLY WITH ALL REQUIREMENTS OF THE ASSOCIATED LISTINGS

INDICATED BY ⬡ ON PLAN SHEETS

EQUIPMENT CONNECTION SCHEDULE

DISCONNECT TYPES
- A- NONFUSED DISCONNECT SWITCH
- B- FUSED DISCONNECT SWITCH
- C- SNAP SWITCH WITH OVERLOADS
- D- CORD & PLUG
- E- ENCLOSED CIRCUIT BREAKER

STARTER TYPES
- 1- MAGNETIC X-LINE FVNR
- 2- COMBINATION STARTER/DISC
- 3- MANUAL MOTOR STARTER
- 4- VFD FURNISH BY HC, INSTALLED & CONNECTED BY EC
- 5- PACKAGE UNIT BY MANUFACTURER
- 6- SEE REMARKS

MOTOR STARTER TYPES
- S1- START/STOP PB W/PILOT LIGHT IN COVER
- S2- H-O-A SWITCH W/PILOT LIGHT IN COVER
- S3- AUX. CONTACTS
- S4- SNAP
- S5- CONTROL TRANSFORMER
- S6- CONTROLS BY MC
- S7- CONTROLS BY PC

EQUIP TAG	EQUIPMENT DESCRIPTION	LOCATION	HP MCA KW	VOLTS	PHASE	POWER SOURCE PANEL / CIRCUIT#	POWER SOURCE MOP (A)	WIRE & CONDUIT	DISCONNECT TYPE	DISCONNECT NEMA ENCL.	DISCONNECT BY	DISCONNECT LOCATION	STARTER TYPE	STARTER NEMA ENCL.	STARTER BY	STARTER LOCATION	STARTER NOTES	FIRE ALARM FAN SHUT-DOWN	DUCT MOUNTED SMOKE DETECTOR(S)	ADDITIONAL COMMENTS	EQUIP TAG
FCU-1	WALL FAN COIL UNIT	ENTRANCE 109	.04 KW	120	1	1P1-25	--	(2)#12, (1)#12G, 3/4" C	A	1	DIV26	AT UNIT	5	1	MFR	AT UNIT	S6	--	--	1,2,3	FCU-1
FCU-2	WALL FAN COIL UNIT	STAIR 109A	.04 KW	120	1	1P1-25	20A,1P	(2)#12, (1)#12G, 3/4" C	A	1	DIV26	AT UNIT	5	1	MFR	AT UNIT	S6	--	--	4,6	FCU-2
FCU-3	WALL FAN COIL UNIT	RECRUITING OFFICE 112	.158 KW	120	1	1P1-26	20A,1P	(2)#12, (1)#12G, 3/4" C	A	1	DIV26	AT UNIT	5	1	MFR	AT UNIT	S6	--	--	4,6	FCU-3
FCU-4	WALL FAN COIL UNIT	RECRUITING OFFICE 112	.158 KW	120	1	1P1-26	20A,1P	(2)#12, (1)#12G, 3/4" C	A	1	DIV26	AT UNIT	5	1	MFR	AT UNIT	S6	--	--	4,6	FCU-4
FCU-5	WALL FAN COIL UNIT	FIA CO MG 115	.09 KW	120	1	1P1-27	20A,1P	(2)#12, (1)#12G, 3/4" C	A	1	DIV26	AT UNIT	5	1	MFR	AT UNIT	S6	--	--	4,6	FCU-5
FCU-6	WALL FAN COIL UNIT	FIA CO MG 114	.09 KW	120	1	1P1-27	20A,1P	(2)#12, (1)#12G, 3/4" C	A	1	DIV26	AT UNIT	5	1	MFR	AT UNIT	S6	--	--	4,5	FCU-6
FCU-7	WALL FAN COIL UNIT	FIA CO MG 118	.078 KW	120	1	1P1-27	20A,1P	(2)#12, (1)#12G, 3/4" C	A	1	DIV26	AT UNIT	5	1	MFR	AT UNIT	S6	--	--		FCU-7
FCU-8	WALL FAN COIL UNIT	FIA CO MG 116	.078 KW	120	1	1P1-27	20A,1P	(2)#12, (1)#12G, 3/4" C	A	1	DIV26	AT UNIT	5	1	MFR	AT UNIT	S6	--	--	4,6	FCU-8
FCU-9	WALL FAN COIL UNIT	FIA CO MG 119	.078 KW	120	1	1P1-27	20A,1P	(2)#12, (1)#12G, 3/4" C	A	1	DIV26	AT UNIT	5	1	MFR	AT UNIT	S6	--	--	4,6	FCU-9
FCU-10	WALL FAN COIL UNIT	WOMENS 118	.04 KW	120	1	1P1-28	20A,1P	(2)#12, (1)#12G, 3/4" C	A	1	DIV26	AT UNIT	5	1	MFR	AT UNIT	S6	--	--	4,6	FCU-10
FCU-11	WALL FAN COIL UNIT	MENS 117	.04 KW	120	1	1P1-28	20A,1P	(2)#12, (1)#12G, 3/4" C	A	1	DIV26	AT UNIT	5	1	MFR	AT UNIT	S6	--	--	4,6	FCU-11
FCU-12	WALL FAN COIL UNIT	SUPERS OFFICE 132	.078 KW	120	1	1P1-28	20A,1P	(2)#12, (1)#12G, 3/4" C	A	1	DIV26	AT UNIT	5	1	MFR	AT UNIT	S6	--	--	4,5	FCU-12
FCU-13	WALL FAN COIL UNIT	WORK ROOM 211	.218 KW	120	1	2P1-27	20A,1P	(2)#12, (1)#12G, 3/4" C	A	1	DIV26	AT UNIT	5	1	MFR	AT UNIT	S6	--	--	--	FCU-13
FCU-14	WALL FAN COIL UNIT	BN OSM 218	.078 KW	120	1	2P1-28	20A,1P	(2)#12, (1)#12G, 3/4" C	A	1	DIV26	AT UNIT	5	1	MFR	AT UNIT	S6	--	--	--	FCU-14
FCU-15	WALL FAN COIL UNIT	BN COMMANDER 213	.078 KW	120	1	2P1-28	20A,1P	(2)#12, (1)#12G, 3/4" C	A	1	DIV26	AT UNIT	5	1	MFR	AT UNIT	S6	--	--	--	FCU-15
FCU-16	WALL FAN COIL UNIT	KITCHEN/COPIER 202C	.041 KW	120	1	2P1-29	20A,1P	(2)#12, (1)#12G, 3/4" C	A	1	DIV26	AT UNIT	5	1	MFR	AT UNIT	S6	--	--	--	FCU-16
FCU-17	WALL FAN COIL UNIT	WOMENS 209	.078 KW	120	1	2P1-29	20A,1P	(2)#12, (1)#12G, 3/4" C	A	1	DIV26	AT UNIT	5	1	MFR	AT UNIT	S6	--	--	--	FCU-17
FCU-18	WALL FAN COIL UNIT	MENS 207	.078 KW	120	1	2P1-29	20A,1P	(2)#12, (1)#12G, 3/4" C	A	1	DIV26	AT UNIT	5	1	MFR	AT UNIT	S6	--	--	--	FCU-18
FCU-19	WALL FAN COIL UNIT	S5 OPS 208	.09 KW	120	1	2P1-40	20A,1P	(2)#12, (1)#12G, 3/4" C	A	1	DIV26	AT UNIT	5	1	MFR	AT UNIT	S6	--	--	--	FCU-19
FCU-20	WALL FAN COIL UNIT	S1 4 S4 ALOC 205	.09 KW	120	1	2P1-40	20A,1P	(2)#12, (1)#12G, 3/4" C	A	1	DIV26	AT UNIT	5	1	MFR	AT UNIT	S6	--	--	--	FCU-20
FCU-21	WALL FAN COIL UNIT	CONFRENCE 204	.09 KW	120	1	2P1-32	20A,1P	(2)#12, (1)#12G, 3/4" C	A	1	DIV26	AT UNIT	5	1	MFR	AT UNIT	S6	--	--	--	FCU-21
FCU-22	WALL FAN COIL UNIT	CLASSROOM 206	.218 KW	120	1	2P1-32	20A,1P	(2)#12, (1)#12G, 3/4" C	A	1	DIV26	AT UNIT	5	1	MFR	AT UNIT	S6	--	--	--	FCU-22
FCU-23	WALL FAN COIL UNIT	CLASSROOM 205	.218 KW	120	1	2P1-27	20A,1P	(2)#12, (1)#12G, 3/4" C	A	1	DIV26	AT UNIT	5	1	MFR	AT UNIT	S6	--	--	--	FCU-23
FCU-24	WALL FAN COIL UNIT	CORRIDOR 202B	.078 KW	120	1	2P1-30	20A,1P	(2)#12, (1)#12G, 3/4" C	A	1	DIV26	AT UNIT	5	1	MFR	AT UNIT	S6	--	--	--	FCU-24
FCU-25	WALL FAN COIL UNIT	BN XO 212	.078 KW	120	1	2P1-30	20A,1P	(2)#12, (1)#12G, 3/4" C	A	1	DIV26	AT UNIT	5	1	MFR	AT UNIT	S6	--	--	--	FCU-25
FCU-26	WALL FAN COIL UNIT	BN XO 214	.078 KW	120	1	2P1-30	20A,1P	(2)#12, (1)#12G, 3/4" C	A	1	DIV26	AT UNIT	5	1	MFR	AT UNIT	S6	--	--	--	FCU-26
FCU-27	WALL FAN COIL UNIT	LOBBY 202	.078 KW	120	1	2P1-30	20A,1P	(2)#12, (1)#12G, 3/4" C	A	1	DIV26	AT UNIT	5	1	MFR	AT UNIT	S6	--	--	--	FCU-27
--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
P-1	HWS PUMP 1	BASEMENT BOILER ROOM	5.5 HP	208	3	RP1 #30, 32, 34	50A,3P	(3)#6, (1)#6N, (1)#8G 1-1/4" C	B	1	DIV26	AT UNIT, WALL MOUNT	2	1	MFR	AT UNIT	S2, S3, S6	--	--	--	P-1
P-2	HWS PUMP 2	BASEMENT BOILER ROOM	5.5 HP	208	3	RP1 #31, 33, 35	50A,3P	(3)#6, (1)#6N, (1)#8G 1-1/4" C	B	1	DIV26	AT UNIT, WALL MOUNT	2	1	MFR	AT UNIT	S2, S3, S6	--	--	--	P-2
--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ERU-1	ENERGY RECOVERY UNIT 1	ROOF	1/2 HP	208	3	2P1- 49, 51, 53	15A,3P	(3)#12, (1)#12N, (1)#10G 3/4" C	B	3R	DIV26	AT UNIT, PROVIDE RACK PEDESTAL	5	1	MFR	AT UNIT	S6	--	--	--	ERU-1
ERU-2	ENERGY RECOVERY UNIT 2	ROOF	3/4 HP	208	3	2P1- 50, 52, 54	15A,3P	(3)#12, (1)#12N, (1)#10G 3/4" C	B	3R	DIV26	AT UNIT, PROVIDE RACK PEDESTAL	5	1	MFR	AT UNIT	S6	--	--	--	ERU-2
--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

GENERAL EQUIPMENT CONNECTION SCHEDULE NOTES:

1. PROVIDE OVERLOAD HEATERS FOR ALL MOTOR STARTERS. SIZE OVERLOADS IN FIELD PER ACTUAL FURNISHED MOTOR NAMEPLATE DATA.
2. FOR BID PURPOSES, SIZE MOTOR STARTERS BASED ON HP/MCA/KW VALUES INDICATE. PROVIDE MOTOR STARTERS PROPERLY SIZED PER APPROVED SUBMITTALS AND COORDINATION DRAWINGS FURNISHED DURING CONSTRUCTION.
3. COORDINATE IN FIELD WITH INDIVIDUAL TRADES FOR EQUIPMENT SUBSTITUTIONS. WHERE SUBSTITUTIONS (FROM THE BASIS OF DESIGN) HAVE BEEN MADE, COORDINATE ANY AND ALL CHANGES OF VOLTAGE, MCA, AND HP WITH THE RELEVANT CONTRACTOR. THE EC IS RESPONSIBLE FOR ANY DESIGN WORK AND ALL RESIZING OF FEEDERS, BRANCH CIRCUITS, OVER-CURRENT PROTECTION, AND STARTER/DISCONNECT SIZING CHANGES THAT RESULT FROM SUCH EQUIPMENT SUBSTITUTIONS. ALL CONSTRUCTION COST CHANGES ASSOCIATED WITH EQUIPMENT SUBSTITUTIONS, AS MENTIONED HEREIN, ARE SOLEY THE RESPONSIBILITY OF THE CONTRACTOR SUPPLYING THE SUBSTITUTED EQUIPMENT. ALL ASSOCIATED REDESIGN, REVISIONS, AND MODIFICATIONS ARE TO BE DONE AT NO ADDITIONAL COST TO THE OWNER/DIRECTOR'S REPRESENTATIVE, ARCHITECT, OR ENGINEER.
4. INSIDE UNIT FED VIA OUTSIDE UNIT, CONNECT PER MFR'S INSTRUCTIONS, VIA SEPERATE 1/2" POWER CIRCUIT CONDUIT.
5. ALL CIRCUIT BREAKERS INDICATED ON EQUIPMENT CONNECTION SCHEDULE FOR INSTALLATION IN EXISTING PANELS. ADDED BREAKERS ARE TO BE UL LISTED FOR USE IN EXISTING PANEL, MATCHING EXISTING POWER CHARACTERISTICS, VIF.
6. PROVIDE 1/2" CONDUIT WITH PULL STRING BETWEEN OUTDOOR UNIT AND INDOOR UNIT. FOR INTERLOCKING CONTROL WIRING. ALL CIRCUITRY TO BE CONCEALED, COORDINATE WITH H-CONTRACT AND DIRECTOR'S REPRESENTATIVE

" - " INDICATES NOT REQUIRED OR NOT APPLICABLE
"Y" INDICATES YES, REQUIRED
"MFR" INDICATES SUPPLIED/INSTALLED BY MANUFACTURER

LED LUMINAIRE SCHEDULE

TYPE	DESCRIPTION	MFR. & CATALOG NO.	SIZE	LAMP	LUMENS	VOLTAGE	WATTS	MOUNTING	MOUNTING HEIGHT	FINISH	REMARKS	TYPE
A1	LAY-IN LED TROFFER, DIMMABLE, STATIC WHITE	MARK LIGHTING: CAT#WHSPR-2X2-90CRI-40K-4800LM-MIN1-MVOLT-SWC-_-_-_-ZT-_-BAA	24 W x 24 L x 3.1" D	LED	5000	UNV	40	RECESSED	CLG	WHITE		A1
A1EM	LAY-IN LED TROFFER, DIMMABLE, STATIC WHITE, WHITE BATTERY BACK-UP	MARK LIGHTING: CAT.#ZFPZ-38B-840-2-ADS-UNV-DIM-DSC-BAC-BSL10LST	24 W x 24 L x 3.1" D	LED	5000	UNV	40	RECESSED	CLG	WHITE	WHITE INTEGRAL TEST SWITCH	A1EM
B1	LOW PROFILE, SQUARE 6 INCH, LED DOWN LIGHT, DIMMABLE, STATIC WHITE, 1200LM, 4000K, FIELD SELECTABLE	JUNO: CAT# JPDZ6-SQDB-SQDC-AL010-SWW5WD-90CRI-JPZ6NCMF-MVOLT-ZT10-WHH	7 7/8" W x 7 5/8" L x 3" D	LED	1200	UNV	16	RECESSED	CLG	WHITE		B1
B1EM	LOW PROFILE, SQUARE 6 INCH, LED DOWN LIGHT, DIMMABLE, STATIC WHITE, 1200LM, 4000K, FIELD SELECTABLE, BATTERY BACKUP	JUNO: CAT# JPDZ6-SQDB-SQDC-AL010-SWW5WD-90CRI-JPZ6NCMF-MVOLT-ZT10-WHH-IIS251	7 7/8" W x 7 5/8" L x 3" D	LED	1200	UNV	16	RECESSED	CLG	WHITE	WHITE INTEGRAL TEST SWITCH	B1EM
C1	DIMMABLE UNDER CABINET LED TAPE LIGHTING, WITH MULTIPLE DEEP CHANNEL EXTRUSION HOUSINGS, TAPE TO WIRE CONNECTORS, POWER SUPPLIES, LED DRIVERS, AND ASSOCIATED COMPONENTS FOR LENGTH OF RUN INDICATED.	JUNO: CAT# JFX-HDHL-24V-300LM-35K-90CRI-DL-M40, JFXDRV-MVOLT-ZT-90-M20-JFX-4FT-DPCH-M50, JFX-HDHL-CNT-TTW-M500 AND JFX-HDHL-CNT-TTEE-M500	TAPE IN 1/2"D HOUSING, SEE DWG FOR LENGTHS	LED	300 LM /FT	UNV / 42V DC	90 W MAX.	SURFACE	UNDER-NEATH OF UPPER CABINETS	WHITE		C1
D1	LOW PROFILE, LED, CEILING T-B LIGHT STRIP WITH MULTIPLE T-BAR MODULES, POWER SUPPLIES, LED DRIVERS, AND ASSOCIATED COMPONENTS FOR LENGTH OF RUN INDICATED	JLC TECH:T-BAR LED CAT#TBSL-MN-4-24-DW-U-W	TAPE IN 1/2"D HOUSING, SEE DWG FOR LENGTHS	LED	584 LM /FT	UNV / 42V DC	8 W /FT	SURFACE	CLG	WHITE		D1
E1	LED CEILING COVE FIXTURE COMPATABLE WITH ARMSTRONG-AXIOM COVE-PERFECT SYSTEM WITH MULTIPLE DEEP CHANNEL EXTRUSION HOUSINGS, WIRE CONNECTORS, POWER SUPPLIES. LED DRIVERS, CORNERS AND ASSOCIATED COMPONENTS FOR LENGTH OF RUN INDICATED, W 4 EM BATTERY MODULES	AXIS LIGHTING: CAT# CC-H-1-CL-1300-90-40-W-UNV-DP-1-+E(4)-AC-B4	AS INDICATED ON REFLECTED CEILING PLAN	LED	1300 /FT	UNV	48 W / 4 FT	SURFACE	CLG	WHITE		E1
F1	MODERN, LEAFED LED CABLE HUNG PENDANT	MODERN FORMS LIGHTING: CAT# PD-52734-34-4000K-	34" DIA	LED	3414	UNV	129	HEIGHT ADJUSTABLE CABLE PENDANT	CLG	WHITE		F1
G1	RECESSED, NARROW APERATURE, LED SLIT FIXTURE, PLASTER FLANGE	EXTENT LIGHTING: CAT# HTG-1R-LP-RD-TFWP-R*X*-DHL-MEDOF-40-VU-D	1.5" APPERATURE	LED	9.5 W /FT	UNV	9.5 W /FT	RECESSED	AS INDICATED OR AS DIRECTED BY DIRECTOR'S REPRESENTATIVE	CUSTOM COLOR AS SELECTED BY ARCHITECT		G1
H1	24" WALL MOUNT, LENSED SURFACE LED UTILITY FIXTURE	LITHONIA: FMVTSL-24IN-MVOLT-30K-90DCRI-BM	5" H x 24" W x 4" D	LED	1363	UNV	18	SURFACE	10 INCHES ABOVE DOOR FRAME	BRUSHED NICKEL		H1
EX1	LOW PROFILE DIE-CAST ALUMINUM LED EXIT, UL924 LISTED, 1 FACE	CHLORIDE: CAT.#ER46L-1-W-R	11" W x 8" L x 7/8" D	LED	6	UNV	2.5	UNIVERSAL	AS INDICATED OR AS DIRECTED BY DIRECTOR'S REPRESENTATIVE	WHITE		EX1
EX2	LOW PROFILE DIE-CAST ALUMINUM LED EXIT, UL924 LISTED, 2 FACE	CHLORIDE: CAT.#ER46L-1-W-R	11" W x 8" L x 7/8" D	LED	6	UNV	2.5	UNIVERSAL	AS INDICATED OR AS DIRECTED BY DIRECTOR'S REPRESENTATIVE	WHITE		EX2
EM1	LOW PROFILE DIE-CAST ALUMINUM LED COMBINATION EXIT WITH EMERGENCY LIGHT, UL924 LISTED, 1 FACE	EXIT LIGHT COMPANY: CAT. #COMBOCA-R-W-BB-S	11.75" H x 12.5 W x 2..375" D	LED	6	UNV	3	UNIVERSAL	AS INDICATED OR AS DIRECTED BY DIRECTOR'S REPRESENTATIVE	WHITE		EM1

24 x 36

NEW YORK STATE | Office of General Services

CONSULTANT

CERTIFICATE OF AUTHORIZATION No.: 0022724

BCA ARCHITECTS ENGINEERS

CABEZAS ENGINEERING, PLLC
New York State Certified MBE Firm
Mechanical, Electrical and Plumbing Engineering

BUILDING CODE COMPLIANCE:

COMPLIANCE STATEMENT:

TO THE BEST OF THE REGISTERED DESIGN PROFESSIONAL'S KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE DRAWINGS AND / OR SPECIFICATIONS ARE IN COMPLIANCE WITH THE 2020 UNIFORM CODE.

ENERGY CODE COMPLIANCE:

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WARNING:

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STATE OF NEW YORK · EDWARD J. CABEZAS · 059 107 79 · LICENSED PROFESSIONAL ENGINEER

REGISTRATION EXPIRES: 8/31/2026

CONTRACT:

ELECTRICAL

TITLE:

RENOVATE INTERIOR SPACES

LOCATION:

STATE ARMORY
150-74 6TH AVE
WHITESTONE, NY

CLIENT:

NYS DIVISION OF MILITARY AND NAVAL AFFAIRS

MARK	DATE	DESCRIPTION
1	6/25/25	BID ADDENDUM 2
	5/20/25	BID DOCUMENTS

PROJECT NUMBER:	47592 – E
DESIGNED BY:	JLE
DRAWN BY:	HNC
FIELD CHECK:	
APPROVED:	HJC

SHEET TITLE:

SCHEDULES

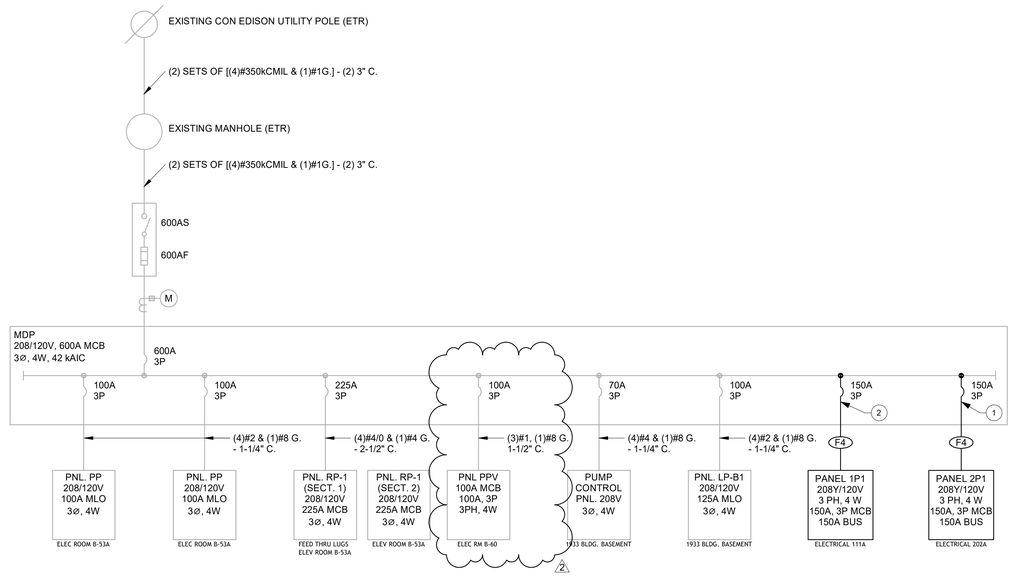
DRAWING NUMBER:

E-500

SHEET 81 OF 94

FEEDER SIZING SCHEDULE

FEEDER ID	PHASE WIRES (AWG)	NEUTRAL WIRES (AWG)	GND (AWG)	CONDUIT SIZE
A3	(3)#10		#10	3/4"
A4	(3)#10	(1)#10	#10	3/4"
B3	(3)#8		#10	3/4"
B4	(3)#8	(1)#8	#10	1"
C3	(3)#6		#8	1"
C4	(3)#6	(1)#6	#8	1-1/4"
D3	(3)#4		#8	1"
D4	(3)#4	(1)#4	#8	1-1/4"
E3	(3)#2		#8	1-1/2"
E4	(3)#2	(1)#2	#8	1-1/2"
E5	(3)#2	(2)#2	#8	1-1/2"
F3	(3)#1/0		#6	1-1/2"
F4	(3)#1/0	(1)#1/0	#6	2"
F5	(3)#1/0	(2)1/0	#6	2"
G3	(3)#2/0		#4	2"
G4	(3)#2/0	(1)#2/0	#4	2"
G5	(3)#2/0	(2)#2/0	#4	2"
H3	(3)#3/0		#4	2"
H4	(3)#3/0	(1)#3/0	#4	2"
H5	(3)#3/0	(2)#3/0	#4	2-1/2"
J3	(3)#4/0		#2	2"
J4	(3)#4/0	(1)#4/0	#2	2-1/2"
J5	(3)#4/0	(2)#4/0	#2	2-1/2"
K3	(3)250 KCMIL		#2	2-1/2"
K4	(3)250 KCMIL	(1)250 KCMIL	#2	2-1/2"
K5	(3)250 KCMIL	(2)250 KCMIL	#2	2-1/2"
L3	(3)350 KCMIL		#1/0	2-1/2"
L4	(3)350 KCMIL	(1)350 KCMIL	#1/0	3"
L5	(3)350 KCMIL	(2)350 KCMIL	#1/0	3"
M3	(3)500 KCMIL		#1/0	3"
M4	(3)500 KCMIL	(2)500 KCMIL	#1/0	3-1/2"
M5	(3)500 KCMIL	(4)500 KCMIL	#1/0	4"
N3	(6)#3/0		(2)#1/0	(2) 2"
N4	(6)#3/0	(2)#3/0	(2)#1/0	(2) 2"
N5	(6)#3/0	(4)#3/0	(2)#1/0	(2) 2-1/2"



2 ONE-LINE DIAGRAM - POWER
NO SCALE

GENERAL NOTES:

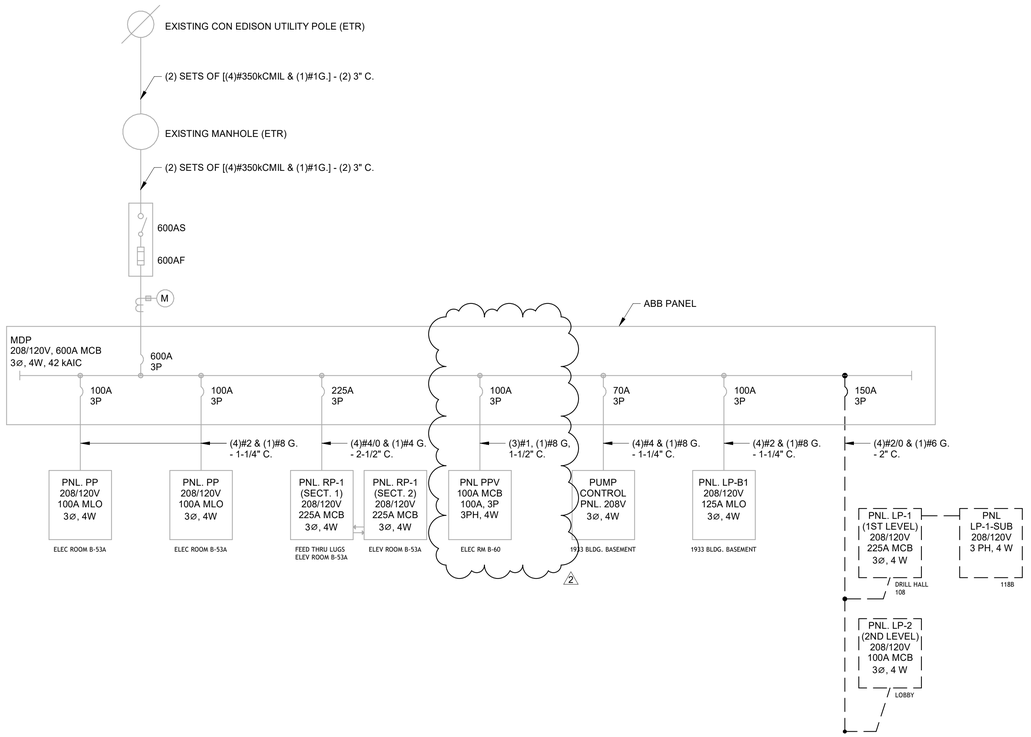
A. SEE DRAWING E-000 FOR APPLICABLE GENERAL NOTES, ABBREVIATIONS AND SYMBOLS LEGEND.

B. CONTRACTOR IS TO PREPARE AND SUBMIT COORDINATION DRAWINGS. SEE SPECIFICATIONS SECTION 013350 - COMPUTER AIDED DESIGN COORDINATION DRAWINGS FOR FURTHER INFORMATION.

KEYED DIAGRAM NOTES:

1. PROVIDE 150A, 3P BREAKER IN AVAILABLE SPACE WITHIN PANEL. MODIFY / REARRANGE / BALLANCE LOADS AS REQUIRED FOR INSTALLATION OF BREAKER. BREAKER IS TO MATCH POWER CHARACTERISTICS AND IS TO BE UL LISTED FOR USE IN PANEL.

2. REPURPOSE / UTILIZE EXISTING 150A, 3P BREAKER, SALVAGED FROM DEMOLITION TO FEED PANEL INDICATED, AS PART OF THIS PROJECT.



1 ONE-LINE DIAGRAM - REMOVALS
NO SCALE

24 x 36

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CERTIFICATE OF AUTHORIZATION No.: 0022724

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WHITESTONE, NY

CLIENT:

NYS DIVISION OF MILITARY AND NAVAL AFFAIRS

MARK	DATE	DESCRIPTION
2	6/25/25	BID ADDENDUM 2
1	6/12/25	BID ADDENDUM 1
	5/20/25	BID DOCUMENTS

PROJECT NUMBER:	47592 – E
DESIGNED BY:	JLE
DRAWN BY:	HNC
FIELD CHECK:	
APPROVED:	HJC

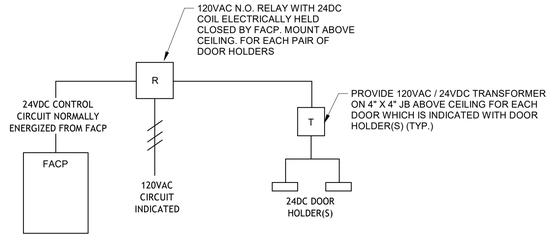
SHEET TITLE:

DIAGRAMS

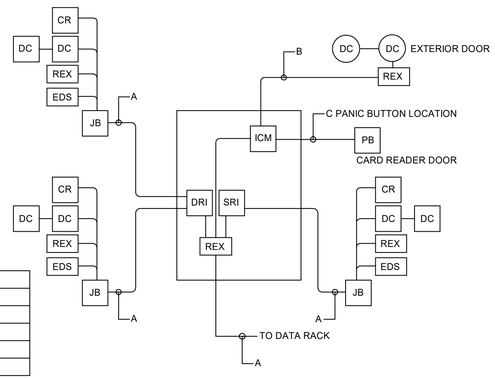
DRAWING NUMBER:

E-600

SHEET 83 OF 94



5 TYPICAL DOOR HOLDER DETAIL
NO SCALE



WIRE LEGEND	
TYPE	DESCRIPTION
A	COMPOSITE 1 PAIR #18 & 5 PAIR #22
B	2 PAIR TSP #22
C	1 PAIR TSP #22
D	4 PAIR UTP CAT6

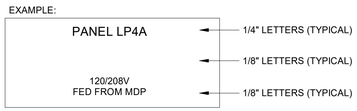
4 ACCES CONTROL - TYPICAL RISER DIAGRAM
NO SCALE

DETAILS NOTES:

1. REFER TO IDENTIFICATION SPECIFICATION 26 0553 FOR ADDITIONAL NAMEPLATE REQUIREMENTS.
2. NAMEPLATE SHALL BE LAMINATED THREE LAYER PLASTIC WITH ENGRAVED BLACK LETTERS ON WHITE CONTRASTING BACKGROUND. LETTER SIZE SHALL BE 1/8", MINIMUM PLATE THICKNESS 1/8".
3. SECURE NAMEPLATE TO SURFACES WITH (2) FLAT HEAD BRASS SCREWS ADHESIVE CEMENT SHALL NOT BE ALLOWED. NAMEPLATES SHALL BE USED TO IDENTIFY ANY NEW EQUIPMENT INSTALL UNDER THIS PROJECT INCLUDING BUT NOT LIMITED TO ANY OF THE FOLLOWING:

- PANELBOARDS
- SWITCHBOARDS
- SWITCHGEAR
- TRANSFORMERS
- SERVICE DISCONNECTS
- EQUIPMENT SAFETY SWITCHES / DISCONNECTS
- CIRCUIT BREAKERS IN DISTRIBUTION PANEL BOARDS
- TIME CLOCKS CONTRACTOR PANELS
- MOTOR STARTERS
- VFD'S

EXAMPLE:



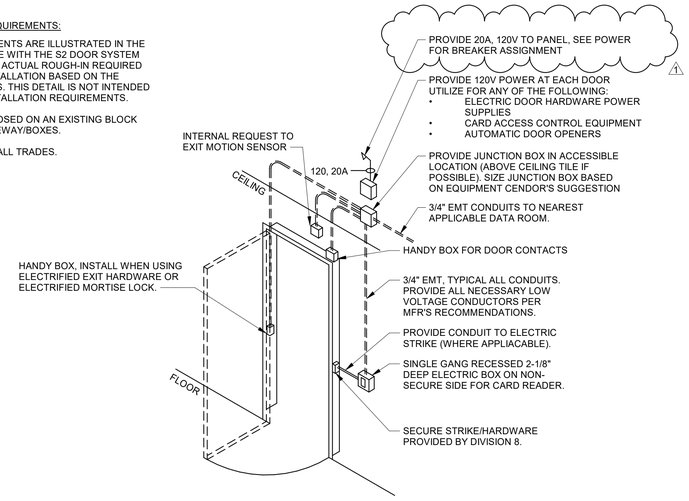
3 NAME PLATE DETAIL
NO SCALE

GENERAL SHEET NOTES:

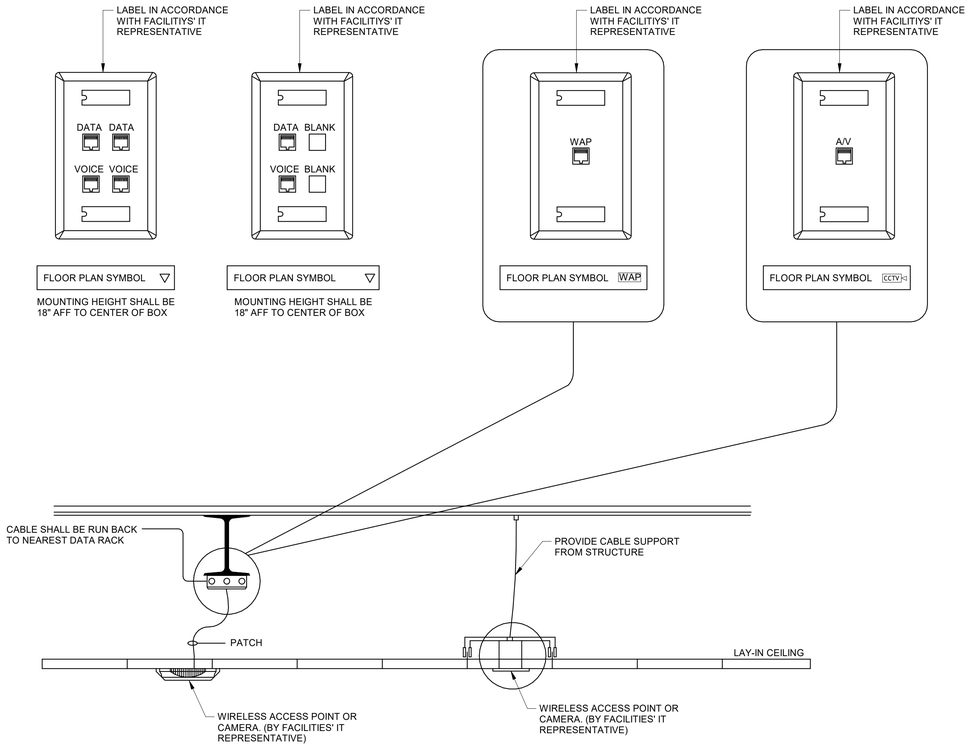
1. REFER TO EG000 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND GENERAL NOTES.
2. ALL CABLING SHALL BE LABELED AT EACH END, AND AT FACEPLATE. FOLLOW ADJACENT LABELING SCHEME. CABLE LABELS SHALL BE SELF LAMINATING, PANDUIT OR EQUAL.
3. ALL CABLING SHALL BE NEATLY RUN SHELF RUN AND SUFFICIENTLY SUPPORTED. FOLLOW NECA 1-2010 GUIDELINES.
4. PROVIDE GROUNDING PER NEC FOR ALL ELECTRICAL EQUIPMENT AND ASSOCIATED EQUIPMENT.
5. CONTRACTOR TO COORDINATE ALL PROPOSED WORK WITH THE LCGH IS STAFF.
6. EXACT ROUTING OF HORIZONTAL CABLING SHALL BE DETERMINED BY CONTRACTOR IN FIELD. REFER TO FLOOR PLAN SHEETS FOR DATA CLOSET LOCATIONS.
7. CONTRACTOR SHALL SUBMIT PRODUCT/SUBMITTAL DATA ON ALL MATERIALS SHOWN ON THIS SHEET FOR APPROVAL BY ENGINEER

CARD ACCESS CONTROL PROJECT REQUIREMENTS:

1. GENERIC ROUGH-IN REQUIREMENTS ARE ILLUSTRATED IN THE ADJACENT DETAIL. COORDINATE WITH THE S2 DOOR SYSTEM VENDOR/INSTALLER & PROVIDE ACTUAL ROUGH-IN REQUIRED FOR EACH SPECIFIC DOOR INSTALLATION BASED ON THE INSTALLER RECOMMENDATIONS. THIS DETAIL IS NOT INTENDED TO SHOW ALL CONDITIONS/INSTALLATION REQUIREMENTS.
2. WHERE INSTALLATION IS PROPOSED ON AN EXISTING BLOCK WALL -PROVIDE SURFACE RACEWAY/BOXES.
3. COORDINATE WITH DIV 01 AND ALL TRADES.



2 TYPICAL ACCESS CONTROL DOOR ROUGH-IN DETAILS AND DIAGRAM
NO SCALE



1 WAP/CAMERA ROUGH-IN DETAIL
NO SCALE

24 x 36

NEW YORK STATE | Office of General Services

CONSULTANT

CERTIFICATE OF AUTHORIZATION No.: 0022724

BCA ARCHITECTS ENGINEERS

CABEZAS ENGINEERING, PLLC
New York State Certified MBE Firm
Mechanical, Electrical and Plumbing Engineering

BUILDING CODE COMPLIANCE:

COMPLIANCE STATEMENT:

TO THE BEST OF THE REGISTERED DESIGN PROFESSIONAL'S KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE DRAWINGS AND / OR SPECIFICATIONS ARE IN COMPLIANCE WITH THE 2020 UNIFORM CODE.

ENERGY CODE COMPLIANCE:

COMPLIANCE STATEMENT:

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REGISTRATION EXPIRES: 8/31/2026

CONTRACT:
ELECTRICAL

TITLE:
RENOVATE INTERIOR SPACES

LOCATION:
STATE ARMORY
150-74 6TH AVE
WHITESTONE, NY

CLIENT:
NYS DIVISION OF MILITARY AND NAVAL AFFAIRS

MARK	DATE	DESCRIPTION
1	6/25/25	BID ADDENDUM 2
	5/20/25	BID DOCUMENTS

PROJECT NUMBER:	47592 – E
DESIGNED BY:	JLE
DRAWN BY:	HNC
FIELD CHECK:	
APPROVED:	HJC

SHEET TITLE:
DETAILS AND DIAGRAMS

DRAWING NUMBER:
E-602

SHEET 85 OF 94

2

FIRE ALARM SYMBOLS LEGEND

FACP(E)	EXISTING TO REMAIN FIRE ALARM CONTROL PANEL
FAA	REMOTE ANNUNCIATOR
NAC	REMOTE AUXILIARY POWER SUPPLY
	TYPE AV NOTIFICATION APPLIANCE. CEILING MOUNTED. 75 CANDELA RATING UON.
WP	TYPE AV NOTIFICATION APPLIANCE. WALL-MOUNTED, WEATHER-PROOF. 75 CANDELA RATING UON.
	TYPE AV NOTIFICATION APPLIANCE. WALL-MOUNTED. 75 CANDELA RATING UON.
	SMOKE DETECTOR
F	ADDRESSABLE FIRE ALARM MANUAL PULL STATION
DH	ELECTROMAGNETIC DOOR HOLD-OPEN RELEASE DEVICE
MM	INDIVIDUAL ADDRESSABLE MODULE
CR	ADDRESSABLE CONTROL RELAY MODULE
HCR	ADDRESSABLE CONTROL RELAY MODULE - HIGH CURRENT
CO R	REMOVE CARBON MONOXIDE DETECTOR
R	REMOVE HORN STROBE
F R	REMOVE FIRE ALARM MANUAL PULL STATION
R	REMOVE WALL MOUNTED STROBE
R	REMOVE BELL

FIRE ALARM ABBREVIATIONS LEGEND

IAW	IN ACCORDANCE WITH
FA	FIRE ALARM
SF	SQUARE FEET
DEG	DEGREES
F	FAHRENHEIT
OT	ORDINARY TEMPERATURE
IT	INTERMEDIATE TEMPERATURE
FACP	FIRE ALARM CONTROL PANEL
FAA	FIRE ALARM REMOTE ANNUNCIATOR
TCR	RADIO TRANSCEIVER
CO	CARBON MONOXIDE
cd	CANDELA
WP	DENOTES WEATHERPROOF
UON	UNLESS OTHERWISE NOTED

SCOPE OF WORK

1. PROVIDE AND INSTALL A WORKING FIRE ALARM SYSTEM THROUGHOUT THE WORK AREA.
   - A. THE SYSTEM SHALL BE COMPRISED OF DEVICES AND APPLIANCES AS INDICATED ON THIS SET OF DRAWINGS.
   - B. THE SYSTEM SHALL BE INSTALLED AND PROGRAMMED SO THAT UPON THE ACTUATION OF AN ALARM, TROUBLE OR SUPERVISORY SIGNAL AT THE FIRE ALARM CONTROL UNIT, A CORRESPONDING SIGNAL SHALL BE TRANSMITTED IN ACCORDANCE WITH MONITORING NOTES ON THIS DRAWING.
   - C. THE LOCATIONS OF FIRE ALARM DEVICES AND APPLIANCES SHALL BE LOCATED AS SHOWN IN THIS SET OF PLANS. DEVIATIONS FROM THIS LAYOUT SHALL NOT BE ALLOWED WITHOUT WRITTEN CONSENT FROM THE DIRECTOR'S REPRESENTATIVE.
2. INSTALL THE SYSTEM SO THAT IT IS COMPLIANT WITH THE APPLICABLE CODES AND STANDARDS, INCLUDING THOSE NOTED ON THIS SHEET.
   - A. WHERE CONFLICTS OR DISCREPANCIES OCCUR BETWEEN CONTRACT DRAWINGS, SPECIFICATIONS, AND REFERENCED CODES AND STANDARDS, THE MOST STRIGINENT REQUIREMENTS SHALL APPLY TO THE CONTRACT.
3. THE FIRE ALARM INSTALLATION CONTRACTOR AND VENDOR SHALL BE LICENSED BY THE NEW YORK DEPARTMENT OF STATE OR APPLICABLE AUTHORITY FOR FIRE ALARM SYSTEMS INSTALLATION.
4. THE SYSTEM SHALL BE TESTED FOR ACCEPTANCE IN ACCORDANCE WITH NFPA 72.
5. THE FIRE ALARM SYSTEM SHALL BE INSTALLED IN COMPLIANCE WITH NFPA 72. FINAL LOCATION OF AUDIBLE NOTIFICATION APPLIANCES SHALL BE SHOWN ON THE CONTRACTOR'S SHOP DRAWINGS AND SHALL BE REVIEWED AND APPROVED BY THE ENGINEER AND THE DIRECTOR'S REPRESENTATIVE.
6. CONDUCT A THOROUGH EXAMINATION OF THE PREMISES PRIOR TO PREPARING A PROPOSAL. ANY CHANGES TO THE DESIGN MADE NECESSARY BY FIELD CONDITIONS SHALL BE CONVEYED TO THE DIRECTOR'S REPRESENTATIVE PRIOR TO PREPARING A PROPOSAL. NO ADDITIONAL COSTS BEYOND THE PROPOSAL PRICE WILL BE ACCEPTED FOR FIELD CONDITIONS THAT COULD HAVE BEEN DETERMINED BY AN INSPECTION OF THE PREMISES.
7. PROVIDE RED-LINE DRAWINGS AND/OR AS-BUILT DRAWINGS. DRAWINGS SHALL BE AVAILABLE IN PDF AND AUTOCAD FORMATS.
8. THE BASE BUILDING "CONTRACT DRAWINGS" INCLUDING ALL RESPECTIVE ADDENDA & BULLETINS SHALL FORM A PART OF THIS WORK & ALL WORK SHALL BE SUBJECT TO RESPECTIVE PROVISIONS THEREOF.

APPLICABLE CODES AND STANDARDS

ALL WORK SHALL COMPLU WITH OSHA AND THE NEW YORK STATE UNIFORM FIRE PREVENTION AND BUILDING CODE, WHICH INCLUDES AND REFERENCES THE FOLLOWING:

1. BCNYS, BUILDING CODE OF NEW YORK STATE, 2020
2. FCNYS, FIRE CODE OF NEW YORK STATE, 2020
3. EBCNYS, EXISTING BUILDING CODE OF NEW YORK STATE, 2020
4. NFPA 13, STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS, 2016
5. NFPA 24, STANDARD FOR THE INSTALLATION OF PRIVATE FIRE SERVICE MAINS AND THEIR APPURTENANCES, 2016
6. NFPA 70, NATIONAL ELECTRIC CODE, 2017
7. NFPA 72, NATIONAL FIRE ALARM AND SIGNALING CODE, 2016

ADDITIONALLY, COMPLY WITH THE FOLLOWING REQUIREMENTS DURING CONSTRUCTION, INCLUDING BUT NOT LIMITED TO:

1. OSHA (OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION)
2. 2020 BCNYS, CHAPTER 33 - SAFEGUARDS DURING CONSTRUCTION
3. 2020 EBCNYS, CHAPTER 15 - CONSTRUCTION SAFEGUARDS
4. 2020 FCNYS, CHAPTER 33, FIRE SAFETY DURING CONSTRUCTION AND DEMOLITION

REFER TO SPECIFICATION SECTION 014100 REGULATORY REQUIREMENTS FOR ADDITIONAL INFORMATION. DEMONSTRATE COMPLIANCE WITH REGULATORY REQUIREMENTS IN THE SITE SPECIFIC SAFETY PLAN REQUIRED PER SPECIFICATION SECTION 011100.

CENTRAL STATION SERVICE NOTES

1. VERIFY THE PRESENCE OF AN EXISTING MONITORING SERVICE OF THE EXISTING FIRE ALARM SYSTEM BY A LISTED CENTRAL STATION IN ACCORDANCE WITH NFPA 72.

FIRE ALARM WORKING DRAWINGS AND SUBMITTALS:

1. PROVIDE PRODUCT SUBMITTALS FOR REVIEW AND APPROVAL PRIOR TO SYSTEM INSTALLATION. PRODUCT SUBMITTALS SHALL INCLUDE MANUFACTURERS, MODEL NUMBERS AND LISTING INFORMATION FOR EQUIPMENT, DEVICES AND MATERIALS.
2. PROVIDE SHOP DRAWINGS AND CALCULATIONS FOR REVIEW AND APPROVAL IN ACCORDANCE WITH APPLICABLE CODES AND STANDARDS PRIOR TO SYSTEM INSTALLATION. THE SHOP DRAWINGS AND CALCULATIONS SHALL, AT A MINIMUM, INCLUDE:
   - A. A FLOOR PLAN WHICH INCLUDES THE FOLLOWING:
     - a. INDICATES THE USE OF ALL ROOMS.
     - b. LOCATIONS OF ALARM-INITIATING AND NOTIFICATION APPLIANCES.
     - c. ALARM CONTROL AND TROUBLE SIGNALING EQUIPMENT.
     - d. POWER CONNECTION.
     - e. CONDUCTOR TYPES AND SIZES.
     - f. DETAILS OF CEILING HEIGHT AND CONSTRUCTION.
   - B. THE INTERFACE OF SAFETY FIRE CONTROL FUNCTIONS, SUCH AS HVAC SHUTDOWN AND/OR CLOSING OF DAMPERS.
   - C. A DETAILED ONE-LINE DIAGRAM OF THE FIRE ALARM SYSTEM COMPONENTS AND WIRING.
   - D. DOCUMENTATION INDICATING APPLIANCES AND INDICATING INTELLIGIBILITY (WHERE REQUIRED) OF AUDIBLE NOTIFICATION (STI OR CIS) AND/OR MINIMUM SOUND PRESSURE AUDIBILITY LEVEL IS COMPLIANT WITH NFPA 72 FOR ALL AREAS.
   - E. BATTERY CALCULATIONS.
   - F. VOLTAGE DROP CALCULATIONS.
3. PROVIDE CONTRACT CLOSEOUT DOCUMENTS FOR APPROVAL BY THE ENGINEER, OWNER/DIRECTOR'S REPRESENTATIVE. THE CONTRACT CLOSEOUT DOCUMENTS SHALL INCLUDE, BUT ARE NOT LIMITED TO:
   - A. SYSTEM RECORD OF COMPLETION IN ACCORDANCE WITH NFPA 72.
   - B. AN OWNER'S MANUAL AND MANUFACTURER'S PUBLISHED INSTRUCTIONS IN ACCORDANCE WITH NFPA 72.
   - C. RECORD (AS-BUILT) DRAWINGS IN ACCORDANCE WITH NFPA 72.
4. PROVIDE ADDITIONAL INFORMATION AND/OR CALCULATIONS AS REQUESTED DURING THE SUBMITTAL REVIEW AND APPROVAL PROCESS.
5. SUBMITTALS AND SHOP DRAWINGS SUBMISSIONS REQUIRING MORE THAN TWO REVIEW CYCLES DUE TO CONTRACTOR'S OR SUB CONTRACTOR'S OWN ERRORS, OMISSIONS OR INCOMPLETENESS CAUSES ADDITIONAL EFFORTS REQUIRED BY ENGINEER (RAN FIRE PROTECTION ENGINEERING P.C.). THESE ADDITIONAL EFFORTS ARE BACK-CHARGEABLE TO AND AT THE SOLE COST OF THE CONTRACTOR AND/OR SUB CONTRACTOR WHO SHALL PAY RAN'S STANDARD HOURLY RATES AS ADDITIONAL SERVICES UNDER RAN'S CONTRACT WITH OWNER/CLIENT.

FIRE ALARM SYSTEM NOTES

1. SECONDARY POWER SHALL BE PROVIDED IN ACCORDANCE WITH NFPA 72 TO PROVIDE POWER FOR A MINIMUM OF 24 HOURS STANDBY AND 5 MINUTES ALARM.
2. INSTALLATION WORK SHALL NOT PROCEED UNTIL SUBMITTALS HAVE BEEN RECEIVED, PROCESSED & APPROVED IN ACCORDANCE WITH THE REQUIREMENTS OF THE PROJECTS SPECIFICATIONS.
3. CONSULT THE PROJECT SPECIFICATIONS FOR ADDITIONAL INFORMATION REGARDING THE SYSTEM DESIGN, INTENDED PERFORMANCE, PRODUCTS AND INSTALLATION.
4. DISCREPANCIES BETWEEN THE DRAWINGS AND SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER PRIOR TO BID
   - A. WHERE DISCREPANCIES ARISE BETWEEN THE CONTRACT DRAWINGS, CONTRACT SPECIFICATIONS AND APPLICABLE CODES AND STANDARDS, THE MOST STRINGENT REQUIREMENTS SHALL APPLY TO THE CONTRACT.
5. A WORKING SET OF DOCUMENTS SHALL BE MAINTAINED & USED AS A DRAFT OF THE AS-BUILT DRAWINGS. THIS DRAFT SET SHALL BE AVAILABLE FOR INSPECTION OR REVIEW BY OWNER'S REPRESENTATIVES. THE DRAFT SET OF DOCUMENTS SHALL BE MAINTAINED ON A 48-HOUR BASIS: AS EACH PIECE OF EQUIPMENT IS INSTALLED, THE LOCATION SHALL BE ACCURATELY RECORDED ON THE DRAFT AS-BUILT DOCUMENTS WITHIN 48 HOURS; AS EACH CIRCUIT IS INSTALLED & CONNECTED TO EQUIPMENT, THE ROUTING & CONNECTION ORDER SHALL BE RECORDED ON THE DRAFT AS-BUILT DOCUMENTS WITHIN 48 HOURS. CONSULT THE PROJECT SPECIFICATIONS FOR COMPLETE INFORMATION ON THE REQUIREMENTS FOR AS-BUILT DOCUMENTATION. DOCUMENTS SHALL BE TURNED OVER TO ENGINEER AT COMPLETION OF PROJECT.
6. ALL INITIATING DEVICES, CONTROL MODULES, MONITOR MODULES, NOTIFICATION APPLIANCES, & ALL OTHER EQUIPMENT SHALL BE INSTALLED ON STANDARD ELECTRICAL BACK BOXES THAT ARE SECURED TO THE BUILDING STRUCTURE.
7. WHERE EQUIPMENT MUST BE INSTALLED ON SUSPENDED CEILINGS OR BETWEEN BUILDING STRUCTURAL COMPONENTS, ADEQUATE FIXTURE BARS OR OTHER SUPPORT SHALL BE PROVIDED.
8. CABINET ASSEMBLY & MOUNTING SHALL BE SUCH THAT ALL SWITCHES & OPERATOR CONTROLS ARE NO LESS THAN 36 INCHES & NO MORE THAN 72 INCHES ABOVE THE FINISHED FLOOR.
9. CONTROL UNITS SHALL BE INSTALLED SO THAT WORKING CLEARANCES ARE MAINTAINED AROUND THE UNITS IN ACCORDANCE WITH NFPA 70.
10. ALL CABLES OR CONDUITS SHALL ENTER CONTROL UNITS OR EQUIPMENT IN LOCATIONS PERMITTED BY EQUIPMENT MANUFACTURER.
11. AUDIBLE NOTIFICATION APPLIANCES, VISIBLE NOTIFICATION APPLIANCES, & COMBINATION NOTIFICATION APPLIANCES SHALL HAVE THE SAME STYLE BACKBOX & SHALL BE CAPABLE OF BEING INTERCHANGED.
12. SURFACE MOUNTED RACEWAY SHALL NOT BE ALLOWED IN FINISHED AREAS.
13. ALL CONNECTIONS TO CONTROLS, DEVICES, & APPLIANCES SHALL BE MADE TO TERMINALS OR PIGTAILS THAT ARE AN INTEGRAL PART OF THE CONTROL, DEVICE, OR APPLIANCE. FIELD MANUFACTURED PIGTAIL LEADS SHALL NOT BE ALLOWED.
14. ALL CONDUCTOR SPLICES SHALL BE MADE ON SCREW-TYPE TERMINAL BLOCKS. TERMINAL CABINETS WITH HINGED, LOCKABLE RED COVERS SHALL BE PROVIDED AT ALL FIRE ALARM & REMOTE CONTROL CIRCUIT JUNCTION POINTS WHERE MORE THAN EIGHT CONNECTIONS MUST BE MADE. JUNCTION BOXES WITH TERMINAL STRIPS MAY BE USED WHERE THE NUMBER OF CONNECTIONS IS EIGHT OR LESS. ALL TERMINALS WITHIN A TERMINAL CABINET OR JUNCTION BOX SHALL BE PROPERLY LABELED & SHALL BE ACCURATELY SHOWN ON THE AS-BUILT DRAWINGS.
15. FIRE ALARM SYSTEM WIRING SHALL NOT BE PERMITTED TO BE INSTALLED IN THE SAME CABLE, CONDUIT, OR RACEWAY AS POWER OR LIGHTING CIRCUITS EXCEPT AS ALLOWED FOR FIRE ALARM SYSTEMS IN NFPA 70.
16. AC & DC WIRING SHALL NOT BE PERMITTED IN THE SAME CABLE, CONDUIT, OR RACEWAY.
17. ALL WIRING WITHIN CONTROL EQUIPMENT SHALL BE INSTALLED SO THAT THE WIRING & THE EQUIPMENT ARE ACCESSIBLE. WIRING SHALL BE INSTALLED SO THAT THE EQUIPMENT CAN BE SERVICED OR REMOVED WITHOUT DISCONNECTING OR MOVING UNRELATED CIRCUITS.
18. THE COVERS OF ALL JUNCTION BOXES SHALL BE PAINTED RED UNLESS OTHERWISE NOTED.
19. PENETRATIONS MADE IN ANY FIRE- OR SMOKE- RATED BARRIER, WALL, OR PARTITION, SUCH AS STAIRWELLS, SHALL BE FILLED & PATCHED WITH A MATERIAL THAT PROVIDES A FIRE RATING EQUAL TO OR GREATER THAN THE PENETRATED ASSEMBLY. PROPRIETARY FILLER MATERIALS MUST BE APPROVED OR LISTED AS FIRE-RATED FILLER MATERIALS. PRIOR TO USING SUCH MATERIALS, SUBMIT COMPLETE MANUFACTURER'S INFORMATION FOR APPROVAL.
20. DETERMINE BEST LOCATION FOR ROUTING/RE-ROUTING ALL ASSOCIATED RACEWAYS. RACEWAY ROUTING SHOWN SHALL BE USED & ANY ADDITIONAL OFFSETS OR FITTINGS REQUIRED FOR PROPER INSTALLATION, COORDINATION WITH OTHER TRADES, &/OR TO MAINTAIN PROPER CLEARANCES SHALL BE PROVIDED. VERIFY EXISTING STRUCTURAL, MECHANICAL, ELECTRICAL INSTALLATIONS & AVOID ANY/ALL OBSTRUCTIONS OR INTERFERENCE'S WITH FIRE ALARM RACEWAY ROUTING. RACEWAYS SHALL NOT BE RUN EXPOSED.
21. THE BASE BUILDING "CONTRACT DRAWINGS" INCLUDING ALL RESPECTIVE ADDENDA & BULLETINS SHALL FORM A PART OF THIS WORK & ALL WORK SHALL BE SUBJECT TO RESPECTIVE PROVISIONS THEREOF.
22. ALL FIRE PROTECTION SYSTEMS ARE SHOWN SCHEMATICALLY. IT IS NOT THE INTENT OF THESE PLANS TO SHOW ALL LISTED COMPONENTS. CONTRACTOR IS RESPONSIBLE FOR INSTALLING SYSTEM PER MANUFACTURER REQUIREMENTS. ALL ADDRESSABLE SYSTEM COMPONENTS SHALL BE FROM A SINGLE MANUFACTURER. ALL NOTIFICATION APPLIANCES SHALL BE APPROVED BT THE MANUFACTURER FOR USE WITH PROVIDED POWER SUPPLY AND COMPATIBLE WITH SYNCHRONIZATION PROTOCOL.
23. THE FIRE ALARM LAYOUT SHOWN ON THE CONTRACT DOCUMENTS ARE TO DEFINE THE DESIGN INTENT FOR COMPETITIVE BIDDING & FOR PRELIMINARY SUBMISSION TO THE AUTHORITIES HAVING JURISDICTION. THE WORK OF THE CONTRACT INCLUDES SHOP DRAWINGS FOR THE ACTUAL INSTALLATION CONDITIONS. THE SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER.
24. EGRESS DOOR SWING MAY NOT BE AS SHOWN ON PLANS. LOCATE MANUAL PULL STATIONS ON DOORKNOB SIDE OF DOOR WITHIN 5 FT OF DOOR.
25. THE ACCEPTANCE TESTING OF THE FIRE ALARM SYSTEM SHALL BE INCLUDED IN THE CONTRACT. BEAR THE COST OF ANY FEES FROM THE FIRE DEPARTMENT & FOR ANY OTHER AUTHORITY HAVING JURISDICTION OF MANDATORY FIRE ALARM TESTING & COMMISSIONING.
26. PROVIDE PRIMARY & BATTERY BACKUP POWER & ALL ASSOCIATED WIRING TO ACCOMPLISH WORK.
27. FIRE ALARM SIGNALING SYSTEM MANUAL PULL STATIONS ARE TO BE PROVIDED NOT MORE THAN FIVE FEET AWAY FROM ALL FLOOR EXITS & MOUNTED 48" ABOVE THE FINISHED FLOOR.
28. ALL DEVICES SHALL BE UL/FM LISTED FOR USE WITH THE FIRE ALARM SYSTEM.
29. FIRE ALARM SIGNALING SYSTEM NOTIF'YING AUDIO STROBE COVERAGE IS PER NFPA 72 PUBLIC MODE, THE AMERICANS WITH DISABILITIES ACT (ADA), & FIRE CODE FOR SPACING, CANDELA & AUDIO ALARM AMPLITUDE.
30. WHEN THE FIRE ALARM SYSTEM IS ACTIVATED, ALL HORN STROBES SHALL OPERATE IN A SYNCHRONIZED MANNER. ALARM FOR BUILDING EVACUATION AS DESCRIBED PER APPLICABLE CODES AND STANDARDS. ALL AUDIO/STROBES SHALL BE ADA APPROVED & SYNCHRONIZED. CANDELA RATING AS NOTED.
31. ALL DOOR HOLD OPEN DEVICES SHALL BE CONNECTED TO FIRE ALARM SYSTEM.
32. ALL DUCT SMOKE DETECTORS, AND ANY DETECTOR INSTALLED WITHIN A CONCEALED SPACE OR INACCESSIBLE LOCATION, SHALL BE PROVIDED WITH A LISTED ALARM/SUPERVISORY INDICATOR WITH AN INTEGRAL RESET SWITCH IN AN ACCESSIBLE LOCATION.
33. PROVIDE SURGE SUPPRESSORS AT ALL LOCATIONS WHERE METALLIC FIRE ALARM CABLING ENTERS OR EXITS A BUILDING AND/OR FIRE ALARM CONTROL UNITS PER MANUFACTURER'S REQUIREMENTS.
34. FIRE ALARM CONTROL UNITS, POWER SUPPLY PANELS, AND OTHER EQUIPMENT SHALL BE PROVIDED WITH POWER CIRCUITS WHICH ARE DEDICATED TO FIRE ALARM EQUIPMENT. CIRCUIT BREAKERS SUPPLYING FIRE ALARM EQUIPMENT SHALL BE LABELED AND PROVIDED WITH MEASURES TO PREVENT INADVERTENT SHUTOFF OF FIRE ALARM EQUIPMENT.
35. INSTALL EACH CONTROL RELAY WITHIN 3 FEET OF THE EQUIPMENT IT SERVES.

24 x 36

NEW YORK STATE OF OPPORTUNITY. Office of General Services

DESIGN & CONSTRUCTION

CONSULTANT

BCA ARCHITECTS ENGINEERS

RAN FIRE PROTECTION ENGINEERING

CERTIFICATE OF AUTHORIZATION #: 0017726

BUILDING CODE COMPLIANCE:

COMPLIANCE STATEMENT:

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ENERGY CODE COMPLIANCE:

COMPLIANCE STATEMENT:

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WARNING:

THE ALTERATION OF THIS MATERIAL IN ANY WAY, UNLESS DONE UNDER THE DIRECTION OF A COMPARABLE PROFESSIONAL I.E. ARCHITECT FOR AN ARCHITECT, ENGINEER FOR AN ENGINEER OR LANDSCAPE ARCHITECT FOR A LANDSCAPE ARCHITECT, IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND/OR REGULATIONS AND IS A CLASS 'A' MISDEMEANOR.

STATE OF NEW YORK · DOUGLAS RAYMOND PHILLIPS · 079487 · LICENSED PROFESSIONAL ENGINEER

8/25/2025

REGISTRATION EXPIRES: 7/31/2026

CONTRACT:

ELECTRICAL

TITLE:

RENOVATE INTERIOR SPACES
WHITESTONE ARMORY

LOCATION:

STATE ARMORY
150-74 6TH AVE, WHITESTONE, NY.

CLIENT:

NYS DIVISION OF MILITARY AND NAVAL AFFAIRS

MARK	DATE	DESCRIPTION
2	06/27/2025	ADDENDUM 02
	05/20/2025	BID DOCUMENTS

PROJECT NUMBER:	47592 – E
DESIGNED BY:	SPF
DRAWN BY:	SPF
FIELD CHECK:	SPF
APPROVED:	DRN

SHEET TITLE:

FIRE ALARM NOTES AND SYMBOLS

DRAWING NUMBER:

FA-001

SHEET 86 OF 94