NJM Insurance Group
NEW JERSEY MANUFACTURERS INSURANCE COMPANY
301 Sullivan Way, West Trenton, NJ 08628
609-883-1300 / www.NJM.com

REQUEST FOR BIDS

For

TOILET ROOM RENOVATIONS at SECOND FLOOR BUILDING A
NJM PROJECT #WT.C.2024.009

NEW JERSEY MANUFACTURERS INSURANCE COMPANY
WEST TRENTON CAMPUS
301 SULLIVAN WAY
WEST TRENTON, NJ 08628

NJM PROJECT NUMBERS: WT.C.2024.009

ISSUED: February 3, 2025

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DEFINITION OF TERMS

DEFINITION OF TERMS

Owner	New Jersey Manufacturers Insurance Company 301 Sullivan Way West Trenton, New Jersey 08628
Architect	Fraytak Veisz Hopkins Duthie, P.C., 1515 Lower Ferry Road Trenton NJ, 08618 Phone: (609) 883-7101 fvhdpc.com
Contractor	Party to whom the contract is awarded acting directly or through authorized representatives or employees.
Drawings & Specifications	All drawings and specifications prepared by **Fraytak Veisz Hopkins Duthie, P.C., and their Sub-Consultants** and as directed herein, shall govern in the execution of the work.

REQUEST FOR BIDS

REQUEST FOR BIDS

Notice is hereby given that you have been invited to provide a bid to the Department of Facilities Operations, New Jersey Manufacturers Insurance Company, 301 Sullivan Way, West Trenton, NJ 08628

FOR: PROJECT # WT.C.2024.009
TOILET RM. RENOVATIONS at 2ND FLOOR BUILDING A-NORTH
WEST TRENTON CAMPUS
301 Sullivan Way
West Trenton, New Jersey 08628
ON: March 7, 2025 @ 11:00 am

Sealed bids must be delivered to John Rzepka, Facilities Project Team Leader, Facilities and Operations Department, New Jersey Manufacturers Insurance Company, 301 Sullivan Way, West Trenton, New Jersey 08628 before 11:00 am on **Friday, March 7, 2025.** Bids received after this time will NOT be accepted.

The second-floor toilet rooms in Building A-North at NJM's West Trenton Campus need renovations, repairs, and modifications to maintain function, cleanliness and to meet current ADA accessibility requirements. Additionally, there are issues with the existing behind the wall plumbing, where existing pipes are starting to deteriorate and leak.

The work required shall include furnishing of all labor, material, tools, and appliances necessary to complete the project in the highest quality, craftsman-like manner.

For your convenience the Architectural Drawings and Specifications detailing the project work have been attached to this Request for Bids.

Bids must be prepared on the forms furnished with this bid package and must be submitted by email to Mr. Rzepka at jrzepka@njm.com. All bids will be held and opened at the appropriate date and time. Bids received after the time for opening bids will be returned unopened.

It is suggested that all prospective bidders attend a pre-bid meeting being held at the site on **Monday, February 10, 2025, at 10:00 AM, at New Jersey Manufacturers Insurance Company, 301 Sullivan Way, NJ 08628.**

New Jersey Manufacturers Insurance Company reserves the right to reject any or all bids for any cause whatsoever.

Thank you

INFORMATION FOR BIDDERS

Information for Bidders

1. Proposal Forms

The proposal forms are a complementary part of the Contract Documents and shall be used by the bidder in their submission. All blank spaces must be completed in ink or typewritten. All erasures or other *physical changes in the bid shall be signed or initialed by the bidder. Any omission in the Proposal shall be just cause for rejection.*

2. Submission of Bid

Bidders must use the proposal forms provided.

Bids will be received by the Owner at the time and place designated in the Request for Bids.

3. Unit Prices

In submitting bids, bidders must state the unit price for each item.

4. Alternates

Alternate Bids, if any, for the various portions of work shall be included in each bid for the work as stated in other Sections of the Specifications.

The Contractor is required to provide a price for all Alternate Bids, if any, called for on the Proposal Form. The Owner reserves the right to award a Contract based upon the possible inclusion of one or more such Alternate Bids. The amounts of the Alternate Bids shall include any and all modifications to related, adjacent or surrounding work made necessary by use of such Alternate Bids. The Alternate Bids must be stated as additions to or deductions from the Base Bid, unless otherwise noted.

5. Errors in Bid

In the event there is a discrepancy between prices written in numbers and prices written in words, the prices written in words shall govern.

6. Brand Name or Equivalent

Whenever the Owner requests a brand name for a particular item, it will consider a "brand name or equivalent." If a substitute product is bid upon, the determination of equality will be in the sole discretion of the Owner. If the bidder desires to bid an equivalent item, the bidder shall do the following:

A. The bidder shall type in a substitute item, including the brand name, model number or catalog number, and a full description of item on the "Material Substitution Form" provided. The "Material Substitution Form" shall then be submitted to the Architect and Owner prior to the deadline for bidder's questions for review.

B. Upon request by the Owner, bidders shall provide a sample of the substitute item by bringing the substitute item to the Department of Facilities and Operations. The sample

item shall be provided before the time of the bid opening, and with a paper, brochure or illustrative literature outlining the brand/manufacturer name, model number and full description of them. Each sample shall be clearly marked with the bidder's name, the Owner's project number, project name and the name of the product being substituted.

C. In some cases, a sample of the substitute item may not be requested by the Owner. In such case, bidders shall provide a brochure, pamphlet, or illustrative literature that outlines the brand/manufacturer's name, model number and other information relating to the substitute item upon request by the Owner.

D. Failure to provide a sample item or literature about substitute items upon request by the Owner shall result in disqualification of that item from the bid.

Please note: Bidders are to only bid brand name or equivalent. The Owner will not accept multiple bids on individual items.

7. Non-Collusion Affidavit

Bids must be accompanied by a Non-Collusion Affidavit attesting to, among other things, that the bidder has not, directly or indirectly, entered into an agreement, participated in any collusion or otherwise taken any action in restraint of free, competitive bidding in connection with the above-named project. Included with this bid package is a Non-Collusion Affidavit form which must be completed and submitted with the bid.

8. Condition of Job Site

Each bidder shall make a careful investigation of the job site and inform themself fully of the conditions relating to the construction and labor under which the work will be performed. Failure to do so will not relieve the successful bidder of their obligation to perform the work as set forth in the Contract Documents.

Each bidder by submission of their bid represents that they have apprised themself of all conditions, and the kind, quality, and quantity of work to be performed.

9. Addenda and Interpretation

The Bidder shall carefully study the Bid Documents and compare them with each other, shall examine the Project site and local conditions and shall at once report to the Owner in writing any errors, inconsistencies and ambiguities discovered.

No oral interpretations will be made to any Bidder as to the meaning of the Bid Documents, Drawings and Specifications. Every request for such an interpretation shall be made by email and submitted to **Mr. Rzepka** at jrzepka@njm.com

No inquiry received after **5:00 pm on Wednesday, February 19, 2025,** will be given consideration.

Every interpretation made to a Bidder will be in the form of an Addendum or Bulletin, which, when issued, will be sent as promptly as is practicable to all persons to whom the Drawings and Specifications have been issued.

During the bidding period, the Owner may furnish Addenda or Bulletins for additions to or alterations of the Drawings and Specifications, which shall be included in the work covered by the Proposals. It shall be the responsibility of the Bidder to ascertain that it has received all Addenda and Bulletins issued, prior to submitting its bid.

All issued Addenda and Bulletins shall become part of the Contract Documents.

Revisions, Addenda or Bulletins to the request for bids or bid documents shall be issued to Invited Bidders no later than five (5) days, Saturdays, Sundays, and holidays excepted, prior to the date for acceptance of bids.

10. Interpretation and Approval

Should any dispute arise respecting the true construction and meaning of the Specifications or whether a product or item is equal to that as called for, the same shall be decided by the Owner in its sole discretion.

11. Rejection of Bids

The Owner reserves the right to reject any or all bids and to waive any informality if deemed in the best interests of the Owner.

12. Work Scheduling

Prior to beginning of construction, the Contractor is required to submit in writing work schedules, which shall have the approval of the Owner. The Contractor is also required to submit in writing prior to beginning of construction the methods of construction to be used in performance of this project.

This work schedule is to identify the proposed work hours and be coordinated with the required phasing and logistics plans.

13. The Bids

On a bid for any Contract, the Owner reserves the right to determine who is the most qualified bidder based on experience, ability to perform the work, financial ability, and work previously performed by the bidder in the particular area for which they have bid. All bidders agree that the decision of the Owner shall be final and not appealable unless such decision is made in bad faith.

14. Compliance

The bidder shall be familiar with and comply with all applicable local, state, and federal laws and regulations in the submission of its bid and, if the bidder is awarded the Contract, in the performance of the Contract.

15. Codes

The Contractor shall perform all work to meet the requirements of all codes having jurisdiction and meet the requirements of all manufacturers.

16. Exception to Notices, Instructions and Specifications

Any conditions, limitations, provisos, amendments, or other changes attached or added by the bidder to any of the provisions of this bid package (including the Request for Bid, Information to Bidders and Bid Forms) shall result in rejection of the bid by the Owner.

Any changes made by the bidder to any documents or forms provided by the Owner, and/or required to be submitted by the bidder with its bid shall result in rejection of the bid by the Owner.

Any conditions, limitations, provisos, amendments, or other language included in the bid which does not conform or is inconsistent with any of the provisions of the Request for Bid, Information for Bidders, and Bid Forms shall result in rejection of the bid by the Owner.

17. Insurance

Please refer to Exhibit B – Contractor Insurance Requirements, included at the end of this request for bids and Section 12 (d) of New Jersey Manufacturers Insurance Company Contractor Agreement for Project with Architect for project coverage requirements.

18. NJM Required Contractor Procedures

Please refer to Exhibit A – Contractors Handbook, included at the end of this request for bids.

All Contractors and Sub-Contractors are to follow all procedures as indicated.

19. Pre-Bid Conference

A pre-bid meeting will be held at the site on **Monday, February 10, 2025, at 10:00 AM, at New Jersey Manufacturers Insurance Company, 301 Sullivan Way, West Trenton, New Jersey 08628.** It is suggested that all prospective bidders attend.

20. Owner's Operations

The continuity of NJM's business operations is essential and all work must be planned and performed in a manner that creates the least amount of disruption possible.

Keep driveways and entrances serving the premises clear and available to the Owner, Owner's employees, and emergency vehicles at all times.

Limit use of the premises to work in areas indicated. Confine operations to areas within Contract Limits indicated. Do not disturb portions of the site beyond areas in which work is indicated.

Repair damage caused by construction operations.

21. Contractor Work Access

It is anticipated that the Contractor will be provided access to the work site after NJM's standard working hours. The Contractor work hours will be Monday thru Friday, from 9:00 pm to 5:00 am. Day and weekend work may only be performed if approved in advance by the Owner.

22. Deliveries

A. All deliveries are to be coordinated with NJM's project manager a minimum of 24 hours in advance.

B. No deliveries shall be permitted between 7:00 am and 9:00 am or 3:00 pm and 6:00 pm, Monday through Friday.

23. Continuity of Utilities

It will be the Contractor's responsibility to maintain the continuity of all Utilities in the work areas.

No facilities outside of the project work area are to be impacted by modifications to building systems required by this project. Shutdowns, disconnects, and interruptions in service are to be coordinated with the Owner in advance and scheduled to be performed off hours.

24. Safety and Temporary Protection

The Contractor will be fully responsible for all project safety. This includes following all OSHA and NJM safety protocols, including the use of personal protective devices. The Contractor shall perform all work in accordance with applicable OSHA and NJM safety standards. The application of all adhesives, paints and coatings shall comply with OSHA and NJM safety standards along with the manufacturers written instructions. Safety Data Sheets for all materials to be used on site shall be provided as part of the product submittals prior to installation.

Refer to Contractors Handbook – Exhibit A for additional details.

25. Security

The Contractor will be required to comply with NJM's security requirements. All Contractors, Contractor employees, Sub-Contractors, Sub-Contractor employees and other workers engaged by the Contractor shall sign in with NJM security on a daily basis. Temporary badges will be provided to all workers. Parking areas on site will be designated for Contractor use. Prior to the start of work the Contractor shall provide a list of 24-hour emergency contacts.

The Contractor will be responsible for the security of all Contractors' items.

Refer to Contractors Handbook – Exhibit A for additional details.

26. Logistics

It will be the Contractor's responsibility to store all project related materials offsite or in Owner approved locations on site until those items are installed. All demolition debris is to be removed from the site daily.

27. Use of Building Utilities

A. Toilets: The Contractor will be allowed to use the specified toilet rooms while on site.

B. Water: The Contractor will be allowed to use the building's water supply for the project. The location of water access will be coordinated with the Contractor prior to the start of work.

C. Electricity: The Contractor will be allowed to use the building's electrical power for the project. The Contractor will be responsible for providing their own extension cords or other devices as required.

D. Cafeteria: Contractors, Subcontractors, employees, etc., will be permitted to use the NJM cafeteria.

28. Duration

The project duration is expected to be **90** calendar days.

29. Record Documents

The Contractor is to provide at Project completion a full and complete set of Record Documents showing where the installation varies from what was shown on the originally issued Contract Documents. Mark record sets with red pencil and other colors as necessary to distinguish additional changes or different categories of work. Note change order numbers, construction change directives, RFI numbers and similar identification where applicable. Identify and date each Record Drawing with the date and "PROJECT RECORD DRAWING" in a prominent location.

SCOPE OF WORK

SCOPE OF WORK

NEW JERSEY MANUFACTURERS INSURANCE COMPANY

PROJECT # WT.C.2024.009
TOILET RM. RENOVATIONS at 2ND FLOOR BUILDING A-NORTH
WEST TRENTON CAMPUS
301 Sullivan Way
West Trenton, New Jersey 08628

The work to be performed under this contract includes the following:

Base Bid – This project includes all work associated with completely renovating the work area as designated on the Drawings. Work includes but is not limited to: removal of all existing plumbing fixtures, toilet partitions, door hardware, and room finishes, installation of new ceiling grid, tile, and light fixtures, installation of new plumbing fixtures, toilet partitions, and door hardware, modifications to the existing mechanical, electrical, and plumbing systems including the entire plumbing stack down the ceiling of the first floor, installation of new floor, and wall finishes, door paint, and all other work as specified.

Allowances – There are no allowances included in this project.

Alternates – There are no alternates included in this project.

Unit Prices – Unit Price #1 – Replacement of existing damaged or deteriorated metal plumbing pipes per linear foot.

Duration – Substantial completion is to be achieved within **90** days from the execution of the Contract.

Other Work – There is no other work being performed as part of this project.

AGREEMENT

NEW JERSEY MANUFACTURERS INSURANCE COMPANY CONTRACTOR AGREEMENT FOR PROJECT WITH ARCHITECT

PROPOSAL FORMS

BID DOCUMENT SUBMISSION CHECKLIST

All forms/certifications indicated below must be completed in full and this checklist initialed by the prospective bidder indicating inclusion of completed form with the bid documents. Failure to include any of the following may be a basis for disqualification of the bid.

Initial

Bid Document Submission Checklist ..... _____

Form of Proposal ..... _____

Contractors Handbook (EXHIBIT A) Acknowledgement Form ..... _____

Attachment A – Pre-Work Hazard Analysis ..... _____

Attachment C – Non-Disclosure Agreement ..... _____

Attachment D – Project Directory ..... _____

Bidder's Affidavit ..... _____

Non-Collusion Affidavit ..... _____

Bidder's Qualification Form ..... _____

Proof of Business Registration – Required for Contractor and all Sub-Contractors

Copy of W9 Forms including Taxpayer Identification Numbers ..... _____

Business Registration Certificates ..... _____

Acknowledgement of Receipt of Changes to Bid Documents ..... _____

Material Substitution Form ..... _____

Insurance Certificates/Endorsements

Required for Contractor and all Sub-Contractors ..... _____

FORM OF PROPOSAL

NEW JERSEY MANUFACTURERS INSURANCE COMPANY
For: TOILET RM. RENOVATIONS at 2ND FLOOR BUILDING A-NORTH
NJM PROJECT # WT.C.2024.009

WEST TRENTON CAMPUS
301 Sullivan Way
West Trenton, New Jersey 08628

FROM: _____ (Name of Contractor)
_____ (Address)
_____ (City, State, Zip Code)
_____ (Telephone Number)
_____ (Email Address)

TO: New Jersey Manufacturer's Insurance Company

The undersigned hereby declares that the only person or persons interested in the Proposal as principal or principals, is or are named below, and that no other person has any interest in the Proposal. This Proposal is made without any connection to any other person or persons making a Proposal for the same purpose. The Proposal is in all respects fair and without collusion or fraud and that no officer or employee of the Owner is, shall be, or will become directly or indirectly, interested as a contracting party, partner, stockholder, surety or otherwise in the performance of the contract, or in the supplies, work, or business to which it relates.

In submitting this bid, it is understood that the bidder has agreed to accept all terms and conditions included as part of this bid package. These terms and conditions include but are not limited to: insurance requirements, the general conditions of the agreement, procedures for Contractors, confidentially and non-disclosure agreements.

In submitting this bid, it is understood that the right is reserved by the Owner to reject any and all bids, or to accept part of a bid and reject the remainder thereof, or to accept part from one bidder and remainder from another bidder or bidders.

It is understood that, no bidder shall modify, withdraw or cancel the bid or any part thereof for sixty (60) days after the time designated for the receipt of bids in the Request for Bids.

It is further declared that the site of the work and the Contract Documents have been examined and it is also agreed that the work will be carried out and completed, if this Proposal is accepted, as specified and the undersigned will provide all the Superintendents, Labor, Material, Tools and Equipment, and all else necessary therefore, and incidental thereto for the items in the Proposal, complete in place, at the following prices:

(All sums provided below are to include costs for labor, materials, equipment, tools, machinery, water, heat, utilities, transportation, taxes and other facilities and services necessary for the proper execution and completion of this work.)

(If the bidder intends to use a Sub-Contractor to perform any work element in whole or part, the bidder must list the name, address and phone number for the Sub-Contractor performing the work. As part of this bid package W9 forms, Business Registrations Certificates, Confidentiality and Non-Disclosure Agreement and Insurance Certificates must be provided for all Sub-Contractors.)

Base Bid Scope Item #1 – Demolition and removal of existing items
Performed by:_____

_____Dollars ($_____)

Base Bid Scope Item #2 – Installation of new toilet partitions
Performed by:_____

_____Dollars ($_____)

Base Bid Scope Item #3 – Installation of new door hardware
Performed by:_____

_____Dollars ($_____)

Base Bid Scope Item #4 – Installation of new ceiling grid and tile
Performed by:_____

_____Dollars ($_____)

Base Bid Scope Item #5 – Installation of new wall and floor finishes
Performed by:_____

_____Dollars ($_____)

Base Bid Scope Item #6 – Door preparation and painting
Performed by:_____

_____Dollars ($_____)

Base Bid Scope Item #7 – All required toilet room mechanical work
Performed by:_____

_____Dollars ($_____)

Base Bid Scope Item #8 – All required toilet room electrical work
Performed by:_____

_____Dollars ($_____)

Base Bid Scope Item #9 – All required toilet room plumbing work
Performed by:_____

_____Dollars ($_____)

Base Bid Scope Item #10 – All required toilet room fire protection work
Performed by:_____

_____Dollars ($_____)

The total project cost for all base bid scope items, shall be:

_____Dollars ($_____)

I or We, hereby intend to complete the work required for this project within: ____ Calendar Days.

Please indicate if the following statement is true or false:

ALLOWANCES: There are no allowances included in this bid package.

ALTERNATES: There are no allowances included in this bid package.

UNIT PRICES: Unit Price #1 – Replacement of existing damaged or deteriorated metal plumbing pipes:
_____Dollars ($_____) per linear foot.

The bidder hereby certifies that they have a minimum of 5 years' experience performing projects of this type, scale and complexity for private and public institutions.

AUTHORIZED SIGNATURE:_____

TITLE:_____

FIRM'S NAME:_____

ADDRESS:_____

DATE:_____

TELEPHONE:_____

EMAIL:_____

BIDDER'S AFFIDAVIT

STATE OF _____

COUNTY OF _____

_____ being duly sworn, deposes and says that he

resides at_____

_____

and that he is the _____
(Give Title)

of _____
(Name of Organization)

who signed the above Proposal of Bid, that he was duly authorized to sign, that the Bid is the true offer of the Bidder, that the seal attached is the seal of the Bidder and that all declarations and statements contained in the Bid are true to the best of his knowledge and belief.

_____
Affiant

Subscribed and Sworn before me
this day of , 20 .

_____(Seal)
(Notary Public)

_____
(Commission expiration date)

NON-COLLUSION AFFIDAVIT

STATE OF _____

COUNTY OF_____

I,_____of the Municipality of_____in the County of_____and the State of_____being of full age and being duly sworn according to law on my oath depose and say that:

I _____ am _____ of the firm of _____ the bidder making the Proposal for the above named project; that I executed the said Proposal with full authority so to do; that said bidder has not, directly or indirectly, entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free, competitive bidding in connection with the above named project; that all statements contained in said Proposal and in this affidavit are true and correct, and made with full knowledge; that the Owner relies upon the truth of the statements contained in said Proposal and in this affidavit in awarding the contract for the said project.

Subscribed and sworn to
before me this day
of 20

_____

_____
Notary Public of

My commission expires , 20

BIDDER'S QUALIFICATION FORM

On the form provided, indicate at least five (5) jobs performed within the last three (3) years of a similar nature and contract amount:

1. Name of Job:_____
   Major Construction Items:_____
   _____
   Architect/Engineer Name, Address, & Telephone Number:_____
   _____

2. Name of Job:_____
   Major Construction Items:_____
   _____
   Architect/Engineer Name, Address, & Telephone Number:_____
   _____

3. Name of Job:_____
   Major Construction Items:_____
   _____
   Architect/Engineer Name, Address, & Telephone Number:_____
   _____

4. Name of Job:_____
   Major Construction Items:_____
   _____
   Architect/Engineer Name, Address, & Telephone Number:_____
   _____

5. Name of Job:_____
   Major Construction Items:_____
   _____
   Architect/Engineer Name, Address, & Telephone Number:_____
   _____

ACKNOWLEDGEMENT OF RECEIPT OF CHANGES TO BID DOCUMENTS FORM

NEW JERSEY MANUFACTURER'S INSURANCE GROUP

PROJECT # WT.C.2024.009
TOILET RM. RENOVATIONS at 2ND FLOOR BUILDING A NORTH
WEST TRENTON CAMPUS
301 Sullivan Way
West Trenton, New Jersey 08628

The undersigned bidder hereby acknowledges receipt of the following notices, revisions, or addenda to the bid advertisement, specifications or bid documents. By indicating date of receipt, bidder acknowledges the submitted bid takes into account the provisions of the notice, revision or addendum. Note that the Owner's record of notice to bidders shall take precedence and that failure to include provisions of changes in a bid proposal may be subject for rejection of the bid. If no addendum was received, please initial in the "NONE RECEIVED" space below.

Title of Addendum/Revision	How Received (mail, fax, pick-up, etc.)	Date Received

Acknowledge by bidder: **NONE RECEIVED: _____**

Name of Bidder: _____

By Authorized Representative: _____

Signature: _____

Printed Name and Title: _____

Date: _____

MATERIAL SUBSTITUTION FORM

PROJECT # WT.C.2024.009
TOILET RM. RENOVATIONS at 2ND FLOOR BUILDING A NORTH
WEST TRENTON CAMPUS
301 Sullivan Way
West Trenton, New Jersey 08628

TO THE DESIGNER AND OWNER:

I/we recognize that all **material and detail substitutions must be submitted with the Bid and that we must include with the bid all material attributes, catalogues, data, and performance information for all such substitutions**. The undersigned certifies that all substitutions included in the Bid are herein submitted for approval, at the risk of those substitutions not being approved for use based upon a determination that they are **not equivalent** to what has been drawn or specified.

_____ *(Show Company Name on each page of proposed substitute items, please)*
(Contracting Company Name)

by: _____ (SEAL)
print name: _____
title: _____

The following _____ items listed herein below are proposed as "equivalent" substitutions:
(*use additional copies of this sheet if necessary*)

ITEM: _____
Item Name and Model Number

_____ | _____
Original Manufacturer's Name | *Proposed Manufacturer's Name, Address, Phone*

Materials: _____

Attributes of _____

proposed item: _____

(List All) _____

Use additional copies of this sheet if necessary and also include all manufacturers, materials, attributes, catalogues, date, and performance information with the bid. Please show your company name on each page, and SIGN THE FIRST PAGE.

END OF MATERIAL SUBSTITUTION FORM

CONTRACTORS HANDBOOK

Procedures for Service and Construction Contractors

at

New Jersey Manufacturers Insurance Company

Issued on December 17, 2021

njm.com | 1-800-232-6600

NJM Insurance Group

EST. 1913

TABLE OF CONTENTS

1.0 GENERAL INFORMATION

1.1 PURPOSE

The purpose of this Contractor Handbook is to inform the Contractor of the policies and procedures that they are to follow while working on New Jersey Manufacturers Insurance Company ("NJM") property. This document outlines the requirements Contractors are to adhere to, to ensure the protection and safety of all persons and property while performing work at NJM. This Contractor's Handbook is not an unabridged list of requirements; rather it is a guideline of basic requirements. Additional requirements may be necessary depending on the nature and scope of the work to be performed.

Additionally, this Contractor Handbook shall serve as the Safety and Workplace Rules Orientation for all Contractors. All of the Contractor's employees, subcontractors, subcontractor employees, material providers and other persons working with the Contractor in any capacity related to any project on NJM property are to be provided this Contractor Handbook and shall be responsible with complying with the requirements herein.

1.2 DEFINITIONS

Competent Person – Per the Occupational Safety and Health Administration ("OSHA"), "Competent Person" is "one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them." 29 C.F.R. 1926.32(f) By way of training and/or experience, a Competent Person is knowledgeable of applicable standards, is capable of identifying workplace hazards relating to the specific operations, and has the authority to correct them.

Confined Space – Confined Spaces "include, but are not limited to, tanks, vessels, silos, storage bins, hoppers, vaults, pits, manholes, tunnels, equipment housings, ductwork, pipelines, etc." as defined by OSHA. 29 C.F.R. 1910.146

Contractor – For the purposes of this Handbook, a "Contractor" is defined as an outside person, agency, corporation, etc., engaged by NJM to perform specific work that includes activities such as constructing, erecting, installing, repairing, demolishing, remodeling, engineering, landscaping, grounds, maintenance, or industrial cleaning at NJM facilities.

This Policy does not apply to Contractors that provide food vending and office equipment maintenance, as well as other Contractors who do not fall within the above definition.

Hot Work – Hot Work is defined as welding, grinding, cutting, torching, brazing, soldering work or the use of any type of open flame or spark-producing equipment.

NJM – New Jersey Manufacturers Insurance Company.

NJM Point of Contact – The NJM employee serving as the manager, team leader, and/or coordinator of the project with whom the Contractor will be working with at NJM. Please refer to the attached project directory, which is appended hereto as Attachment D for the name of the NJM Point of Contact.

NJM Safety Coordinator – Please refer to the attached project directory (Attachment D) for the name of the NJM Safety Coordinator.

NJM Safety Supervisor – Please refer to the attached project directory (Attachment D) for the name of the NJM Safety Supervisor.

NJM Security Supervisor – Please refer to the attached project directory (Attachment D) for the name of the NJM Security Supervisor.

1.3 GENERAL REQUIREMENTS

This Contractor Handbook applies to all work being performed at the West Trenton, Parsippany and Hammonton campuses.

All Contractors are expected to be in compliance with all local, state and federal statutes and regulations as well as the requirements of this Handbook while performing work at NJM. Contractors should familiarize themselves with this Handbook and all provided NJM procedures before starting work at NJM.

A Contractor must designate a member of their project team as the Contractor's responsible manager. The responsible manager must acknowledge receipt of this Handbook by signing the Acknowledgement Form (at the end of this Handbook) and is responsible to ensure all employees comply with the procedures outlined herein. Any questions, clarifications or exceptions should be addressed with the Contractor's NJM Point of Contact.

1.4 SECURITY

Site Access – All site visits are to be coordinated with the Contractor's NJM Point of Contact in advance.

Signing In – All Contractors, Contractor's employees, subcontractors, delivery drivers, etc. shall must register with Security by Signing In when arriving at NJM.

Badges – All Contractors working at NJM will be issued an identification badge. All Contractors must provide legal proof of identity, e.g. state issued ID, and will have their photograph taken in order to be issued a badge. The Contractor is expected to prominently display this badge at all times while onsite.

Unless otherwise notified, all Contractors must report to the following locations to be issued badges:

- West Trenton – Security Station #1 which is located at the entrance under the brown awning at the rear of the building
- Parsippany – Security Command Center in the Lobby at the Customer Entrance
- Hammonton – Loading Dock Security Station

Permanent Badges – Contractors, who will be working at NJM for an extended period of time may be issued a Permanent Badge also known as a Contractor access control card. This access control card is programmed to restrict access to only the areas needed to perform the work assignment. The Contractor's NJM Point of Contact will coordinate with Contractor to determine if this type of badge will be necessary for the project and will work with NJM Security to issue the Permanent Badges.

Visitor Badges – Regularly scheduled Contractors may be issued a Visitor Badge. This arrangement is typically used for Contractors who are required to be onsite on a regularly scheduled basis. This Visitor Badge identifies the company name, rather than the individual. This "generic" company identification card is kept with Security and needs to be signed in and out each day. These badges are programmed to restrict access to only the areas needed to perform the work assignment. Contractor shall provide their NJM Point of Contact advance notification of these visitors with the date and anticipated time of the visit.

Lost Badges – Contractor will immediately report any lost badge to their NJM Point of Contact, who will, in turn, report the lost badge to Security and the Facility Operations Help Desk for replacement.

Escorts – Any Contractor requiring a Security escort to a restricted area shall notify their NJM Point of Contact in advance who will, in turn, obtain approval from the appropriate Department Head for Contractor access. The NJM Security Supervisor will be notified by email of the Department Head's approval of access and will coordinate with the Contractor to provide an Escort.

Signing Out – All Contractors must return their identification badges when leaving NJM. All Contractors shall return their badges at the Security Station where they logged in.

Inspection of Vehicles and Containers – NJM Security personnel have the right to inspect any vehicle and/or package/container entering or exiting NJM Property at any time.

1.5 ATTIRE

Contractors shall wear long pants and sleeved shirts at all times while at NJM. All clothing shall be modest and non-offensive. It is preferred Contractors wear branded clothing that identifies themselves.

If necessary, Contractors shall wear the appropriate Personal Protective Equipment. Please refer to Section 3.14, Personal Protective Equipment, for further information.

1.6 SMOKING AND TOBACCO

All three NJM campuses are tobacco free. Smoking, the use of electronic cigarettes, vaping, or the use of any other tobacco product is expressly prohibited while on NJM property.

1.7 CONTRACTOR PARKING

Please refer to the NJM Point of Contact for specific parking requirements. Contractors are to park only in the assigned designated area or as directed by their NJM Point of Contact.

1.8 SPEED LIMITS AND TRAFFIC SIGNS

Contractors shall obey all posted speed limits.

1.9 USE OF NJM FACILITIES

Contractors are permitted to use NJM amenities while working on site but should coordinate with their NJM Point of Contact for specific details.

Cafeterias – NJM has a cafeteria at each campus. Purchases may be made with cash or credit card.

Breakfast is served Monday through Friday from 6:45 am to 9:45 am (7:15 a.m. to 9:45 a.m. at Hammonton and Parsippany). Lunch is served Monday through Friday from 11:15 a.m. to 2:15 p.m. (11:15 a.m. to 2:00 p.m. at Parsippany). It is recommended Contractors avoid using the cafeteria during peak hours:

- Breakfast peak is between 8:00 a.m. and 9:00 a.m.
- Lunch peak is between 12:00 p.m. and 1:00 p.m.

Any disruptive or offensive behavior by the Contractor in the cafeteria will revoke the Contractor's privilege to use this facility.

Restrooms – Restrooms are available for Contractor use at each facility unless prior arrangements have been made for Contractor to provide their own portable toilet facilities.

Unless otherwise indicated by their NJM Point of Contact, the restroom facilities available for Contractors are as follows:

- West Trenton – In the Corridor outside of Security Station #1
- Parsippany – On the lower level of the building
- Hammonton – Off of the loading dock

Contractor should coordinate with their NJM Point of Contact for assistance in finding these locations.

It will be Contractor's responsibility to maintain these facilities in a clean and sanitary condition. Failure to do so will forfeit this privilege and Contractor will be required to provide portable toilets on NJM's site at their own expense.

1.10 POLICY AGAINST VIOLENCE, DISCRIMINATION AND HARASSMENT IN THE WORKPLACE

NJM has adopted policies strictly prohibiting violence, discrimination and harassment in the workplace. The Contractor is expected to adhere to such policies, which is attached hereto as Attachment B-BB.

1.11 PRIVACY

Contractor is expected to ensure its employees are aware of the Confidentiality and Non-Disclosure Agreement entered into between Contractor and NJM and that Contractor's employees abide by the terms of the confidentiality agreement, a copy of which is attached hereto as Attachment C.

Recording Devices – NJM prohibits all video and audio recording while on premises. Exceptions may be made with prior permission.

1.12 FAILURE TO COMPLY

Contractors who do not comply fully and meet the expectations outlined in this Contractor Handbook will be in breach of contract and will be removed from the project and required to leave the NJM premises immediately.

Contractors will be held accountable for the actions and conduct of its agents and employees. NJM may require a Contractor to temporarily or permanently remove an employee(s) from the NJM premises for any of the following reasons:

- Possession or use of alcoholic beverages, nonprescription drugs or the abuse of prescription drugs.
- Possession of explosives, firearms, ammunition, and/or other weapons.
- Deliberate violation of safety or security rules.
- Illegal dumping, handling, or disposal of hazardous materials.
- Except as contracted, destruction or removal of any NJM property or property belonging to other Contractors or NJM employees.
- Engaging in intimidating, threatening, or harassing behavior and/or failure to comply with NJM's policies, including the Company's Policy Against Workplace Violence and the Company's Policy Against Discrimination and Harassment.
- Failure to comply with NJM's Confidentiality and Non-Disclosure Agreement.

2.0 WORK PROCEDURES ON NJM PROPERTY

2.1 OPERATIONS

The continuity of NJM's business operations is essential. All work must be planned and performed in a manner that creates the least amount of business disruption.

2.2 NOTIFICATIONS

Contractors must notify NJM prior to beginning any the following activities on NJM property:

- Working in Confined Spaces including but not limited to manholes, tanks, tunnels, vaults (Please refer to Section 3.12, Confined Space Entry, for additional information)
- Working on security systems
- Working on sprinkler or fire alarm systems
- Moving emergency equipment, e.g. fire extinguishers, first aid kits, AEDs
- Excavation or trenching (Please refer to Section 3.8, Excavation and Trenching, for additional information)
- Any additional or supplemental work not listed in the project documents which have a high risk of injury to Contractor, Contractor's employees and/or other persons and/or property.

2.3 WORK ACCESS

Unless otherwise directed by the NJM Point of Contact, work hours for Contractors are from 7:00 a.m. to 5:00 p.m., Monday through Friday.

Contractors must keep driveways and entrances clear and available to NJM, its employees and emergency vehicles at all times.

Contractors must confine operations to areas within the scope of the contract. They are not to disturb portions of the site beyond their work areas

West Trenton Utility Courtyard – If access to the West Trenton Utility Courtyard is required, Contractors are to coordinate in advance with the NJM Point of Contact. Access gates to the Utility Courtyard will always be closed except when vehicles are entering and exiting the area. Only commercial vehicles are permitted in this area if work is being performed; personal vehicles are expressly prohibited from the Utility Courtyard.

Loading Docks – Unless approved in advance by their NJM Point of Contact, Contractors shall only use the loading dock to drop off or pick up project related materials and/or equipment. Once project related materials and/or equipment are loaded or unloaded, Contractor shall move their vehicle(s) to the approved parking or staging area(s). Contractors shall use all necessary caution and follow all recommended safety procedures when using the loading dock and load levelers, including the use of wheel chocks.

2.4 DELIVERIES

Contractor shall make all efforts to coordinate deliveries in advance with their NJM Point of Contact. Twenty-four (24) hour notice of all deliveries is appreciated.

No deliveries shall be permitted between 7:00 a.m. and 9:00 a.m. or 3:00 p.m. and 6:00 p.m., Monday through Friday.

Unexpected deliveries may be refused.

2.5 MATERIAL TRANSPORT

Any material that needs to be transported inside a NJM building shall be done in a manner to minimize impact to business operations. Contractors shall coordinate with their NJM Point of Contact for specific routes or requirements.

2.6 CONSTRUCTION IN OCCUPIED BUILDINGS

When occupants are present during construction projects, additional safeguards must be implemented to eliminate exposure to injury and illness complaints. The list below includes some but not all additional safeguards the Contractor should implement when occupants are present.

Dust Control – Dust and particles from demolition, sanding and other construction activities must be controlled by adequate ventilation or containments. Coordination with the Contractor's NJM Point of Contact must be made in advance of any dust or particle generating activities to ensure the appropriate containment measures are put in place.

Odor Control – Contractor should be aware of any work that may cause offensive smells, e.g. painting, and notify NJM of this prior to start of any work on site. Proper ventilation and, if necessary, containment must be used by Contractor when odor generating activities are to be performed. Safety data sheets ("SDS") shall be provided to Contractor's NJM Point of Contact prior to any odor generating materials being brought to the site.

Emergency Egress – Contractors are to plan and stage their work such that it does not restrict, obstruct or otherwise impede access to emergency exits.

2.7 PROTECTION OF EXISTING BUILDING SYSTEMS

Contractor must be attentive to the impact their work may have on building systems. Contractor shall not knowingly impair any of these systems, outside of their approved scope of work, without first coordinating and receiving approval from their NJM point of Contact. The list below includes some but not all building systems and the corresponding precautions the Contractor should implement when working around these systems.

Contractor and all of its employees, agents, and subcontractors will be held accountable for any damage to, or disruption of any building systems or building operations, outside of their approved scope of work, due to actions or inactions performed or controlled by the Contractor while working on NJM Property.

Furthermore, Contractors cannot adjust or manipulate NJM property, equipment or building systems outside of the Contractor's approved scope of work.

Heating, Ventilation and Air Conditioning – Contractor shall not modify or otherwise disrupt the HVAC system without prior coordination and approval from the Contractor's NJM Point of Contact. All HVAC systems shall remain operational while work is being performed unless previously coordinated and approved by the Contractor's NJM Point of Contact. Contractor shall ensure the HVAC system is protected in order to prevent contamination or construction debris. In the event Contractor fails to adequately protect the HVAC system resulting in contamination, Contractor shall be held responsible for the cost of the any damage and/or cleaning of the HVAC system as well as any other related costs.

Landscaping/Grounds – Any and all damage caused by Contractor to the Landscaping and Grounds shall be corrected by the Contractor at no cost to NJM.

Fire Alarm System – Contractor shall not modify or disrupt the Fire Alarm System without prior coordination and approval from the Contractor's NJM Point of Contact. All Fire Alarm Systems shall remain operational while all work is being performed unless previously coordinated and approved by the Contractor's NJM Point of Contact. All smoke or other detectors connected to the Fire Alarm System shall be protected from contamination while Contractor is performing work.

Fire Sprinkler System – Contractor shall not modify or disrupt the Fire Sprinkler System without prior coordination and approval from Contractor's NJM Point of Contact. All Fire Sprinkler Systems shall remain operational while all work is being performed unless previously coordinated and approved by the Contractor's NJM Point of Contact. All precautions should be made to avoid any impact to sprinkler heads and piping.

Fire Extinguishers – Contractor shall be responsible for bringing their own portable Fire Extinguishers to the NJM work site.

Electrical System – Contractor shall not modify or disrupt the building Electrical System without prior coordination and approval from the Contractor's NJM Point of Contact. All Electrical Systems not directly affected by Contractor's work shall remain operational unless previously coordinated and approved by the Contractor's NJM Point of Contact.

Elevators/Escalators – Contractor shall not modify or disrupt the Elevators/Escalators without prior coordination and approval from the Contractor's NJM Point of Contact.

Water Supply/Sewerage Sytems – Contractor shall not modify or disrupt the building Water Supply or Sewerage Systems without prior coordination and approval from the Contractor's NJM Point of Contact. All Water Supply and Sewerage Systems shall remain operational while all work is being performed unless previously coordinated and approved by the Contractor's NJM Point of Contact.

Telecommunication Systems – Contractor shall not modify or disrupt the building Telecommunication Systems without prior coordination and approval from the Contractor's NJM Point of Contact. All Telecommunication Systems shall remain operational while all work is being performed unless previously coordinated and approved by the Contractor's NJM Point of Contact.

AED (Automated External Defibrillator) Units – Except in the event of a medical emergency, Contractor shall not move or otherwise disrupt any wall mounted AED Units without prior coordination and approval from the Contractor's NJM Point of Contact.

2.8 WORK AREA MAINTENANCE/HOUSEKEEPING

Work areas must be designated with appropriate signage and barriers. All areas should be kept neat, clean and organized. All work areas should be cleaned daily and kept free of debris to prevent injury.

Furthermore, Contractors cannot block electrical panels, exit doors or other building components.

2.9 WASTE MATERIALS

Unless previously coordinated with their NJM Point of Contact, Contractors are responsible for the removal and disposal of all Waste Materials, including Hazardous Materials, resulting from the work the Contractor is performing. All waste disposal must be in accordance with all applicable State, County, and Municipal regulations, including all Environmental Protection Agency and New Jersey Department of Environmental Protection regulations. Contractor shall coordinate the delivery, location, and pick up of all waste material with their NJM Point of Contract.

2.10 TOOLS AND EQUIPMENT

Contractor is expected to supply all of the necessary tools and equipment to safely and successfully perform their contracted services. If Contractor has a need to use NJM equipment, prior approval from their NJM Point of Contact is required.

2.11 STORAGE

Contractor is responsible for the safe storage of their tools, equipment and materials. Per prior approval from their NJM Point of Contact, Contractor may be allowed to store tools, equipment and materials on NJM's property.

Contractor shall also provide safe and secure storage of chemicals, flammable materials and Hazardous Materials in appropriate containers with proper identification per code or manufacturer recommendations, whichever is more stringent.

2.12 FIRE ALARM IMPAIREMENTS

When Contractor is involved in work that may directly or indirectly impact one or more of the buildings' Fire Alarm Systems, approval must be obtained from their NJM Point of Contact at least 24 hours in advance. As outlined in this handbook, some work will require a Hot Work Permit requires that an impairment be put place. When a Hot Work Permit is issued, all requirements must be followed to include fire impairment if appropriate Work may proceed after the NJM Point of Contact has provided approval to do so.

2.13 SPECIAL CONSTRUCTION

When potentially hazardous construction is required to be performed additional coordination with Contractor's NJM Point of Contact is necessary. Prior to performing any work involving Hot Work, Confined Space Entry, Excavating and Trenching, Using Cranes or Lifts, working with Hazardous Materials or any other construction that puts either Contractor, NJM staff or the project site at additional risk, Contractor shall provide NJM with the appropriate Pre-Work Hazard Analysis Form (Attachment A) and any other information as requested prior to the start date. Specific requirements are outlined in Section 3.0, Safety on NJM Campuses.

3.0 SAFETY ON NJM CAMPUSES

3.1 GENERAL

Contractor is responsible for initiating, maintaining, and supervising all required safety precautions in connection with the performance of their work.

Contractor shall comply not only with NJM's Safety Program, but all applicable laws, statutes, ordinances, codes, rules and regulations and lawful orders of public authorities bearing on the safety of persons and property and their protection from damage, injury, or loss.

3.2 CONTRACTOR'S GENERAL RESPONSIBILITIES

Contractor will supply the name(s) of employee(s) designated as the Competent Person. The Competent Person will remain onsite while all work is being performed to identify and correct any safety hazards should they arise.

Contractor will perform periodic inspections of the work area to ensure compliance of all safety requirements. Inspections will be documented on a standardized form that contains the company name, project name, location of the work, date and time of the inspection, the name and signature of the Competent Person performing the inspection, description of the project specific items being inspected, and a checklist that project specific items have been inspected and the area is safe to work. This inspection report shall be available for review by the NJM Point of Contact, the NJM Safety Coordinator or the NJM Safety Supervisor.

Contractor shall use all equipment, tools, machinery and hazardous materials in accordance with manufacturer guidelines.

Contractor will not allow their employees to work unsupervised while performing activities that could result in injury, serious illness or death if the risk is not mitigated as soon as identified.

Contractor will evaluate inclement weather conditions to determine any impact to the work being performed for the day.

Contractor will be required to implement all controls to mitigate known hazards. Performance of unsafe acts observed by or reported to the NJM Point of Contact, the NJM Safety Coordinator or the NJM Safety Supervisor will result in an immediate stoppage of work until the issue is corrected and Contractor has demonstrated the risk has been mitigated.

3.3 PRE-WORK HAZARD ANALYSIS FORM

Prior to arriving on site or performing any project work, Contractor is required to complete and submit the attached Pre-Work Hazard Analysis Form to their NJM Point of Contact, a copy of which is attached hereto as Attachment A.

3.4 PROJECT AND SITE SPECIFIC SAFETY AND EMERGENCY RESPONSE PLAN

Prior to Contractor arriving on site, Contractor is required to provide a Project and Site Specific Safety and Emergency Response Plans. These plans are to disclose all potential hazards during the project, controls to mitigate those hazards, as well as Contractor's general safety requirements. Contractor will be required to abide by the information provided by these plans.

Acceptance of Contractor's plans only signifies that the plans conform to the requirements of this Handbook. It does not, in any manner, relieve Contractor of the responsibility for providing a safe and healthy work environment.

Contractor must also develop and implement a Comprehensive Health and Safety Plan for his or her employees, covering all aspects of onsite operations associated with the project. This plan must comply with all applicable health and safety regulations and any project-specific requirements that NJM has specified. Contractor must provide a copy of this plan prior to the start date of any work.

3.5 TRAINING

Contractor shall provide all necessary general and project specific environmental safety and health training to their employees pursuant to all state and federal guidelines as well as the requirements of this Handbook prior to the start of any work. This training shall include applicable safety training along with training on project specific equipment, tools, machines, products and materials.

Contractor shall maintain written proof of environmental safety and health training, along with all other applicable training completed by Contractor's employees while working at NJM. The proof of training shall document the names and signatures of the Contractor's employees who received training, the type of training provided, the date the training was performed, and any information pertaining to the person/company that performed the training.

Contractors are also encouraged to hold weekly tool box meetings reviewing applicable safety issues and controls.

3.6 HAZARDOUS MATERIALS

Contractor is responsible for handling Hazardous Materials in compliance with contractual terms and project scope.

If Contractor encounters suspected asbestos, PCBs, or other potentially Hazardous Materials or substances not addressed in the project scope or contract terms, Contractor shall immediately stop work and report the condition, in writing, to their NJM Point of Contact and, if applicable, the Project Architect or Engineer.

Right to Know/The Hazard Communication Standard – In compliance with OSHA's Hazard Communication Standard, 29 CFR 1910.1200(g), all Contractors must provide their NJM Point of Contact, NJM Safety Coordinator and NJM Safety Supervisor, the Contractor's Hazard Communication Program. This includes an inventory of chemicals to be used during the project and SDS sheets for all hazardous chemicals and materials that will be used in the course of the project, and documentation of all safety training related to the use of such chemicals and materials. Furthermore, all containers will have the appropriate labeling matching the SDS sheets.

All SDS sheets are to be provided to NJM as well as any engineers, architects and/or designers as part of the submittal process, prior to the start of any work. Unlabeled containers will not be allowed on site.

Contractor will promptly report any spills of Hazardous Materials to their supervisor; who, in turn, will immediately notify their NJM Point of Contact. In the event a supervisor or NJM Point of Contact is unavailable, Contractor is to notify their NJM Safety Coordinator, NJM Safety Supervisor or Local Security Command Center.

Contractor is responsible for any spill caused by the Contractor's defective equipment, containers, personnel or subcontractors. Contractor shall have on site at all times a spill kit. For large spills, Contractor must provide to the NJM Point of Contact the name, address, and phone number of the emergency response company to be contacted for clean-up. The full cost of any clean up shall be the sole responsibility of Contractor.

Disposal of Waste – Contractor is responsible for the handling and disposal of all hazardous, special, and normal waste generated as a result of their work activities.

3.7 COMPRESSED GAS CYLINDERS

Compressed gas cylinders are not permitted on NJM Property without prior approval from the Contractor's NJM Point of Contact.

Furthermore, all gas cylinders are to be properly labeled and stored when not in use.

3.8 EXCAVATIONS AND TRENCHING

Any excavation or trenching work shall be coordinated in advance with the NJM Point of Contact. Separate plans showing the scope of the excavation, all de-watering and safety controls to be implemented, as well as any other requirements per the Pre-Work Hazard Analysis and Project and Site Specific Safety Plan must be submitted prior to start of any work.

3.9 HOT WORK

All contractors involved in Hot Work will adhere to the following guidelines outlined below:

- Contractor must notify their NJM Point of Contact at least twenty-four (24) hours in advance of performing any Hot Work.
- Contractor must obtain the appropriate Hot Work Permit from their NJM Point of Contact and follow all instructions contained within the Hot Work Permit.
- Contractor must coordinate with their NJM Point of Contact to ensure all necessary Fire Alarm System impairments are in place.
- The designated assigned "Fire Watch" person shall remain in the work area for a minimum of 30 minutes after the work has been completed to monitor for ignition.
- Contractor shall report any abnormalities that would modify the Hot Work Permit to their NJM Point of Contact.

3.10 ELECTRICAL SAFETY AND LOCK OUT/TAG OUT

A Contractor that is involved in electrical work at NJM shall conform to all federal, state, and municipal codes and standards as well as any other established electrical codes, as necessary.

It is the responsibility of Contractor to develop and utilize their own Lock Out/Tag Out Program. The program must be in compliance with guidelines set forth by OSHA, e.g. "The Control of Hazardous Energy (Lockout/Tagout)," and the National Fire Protection Association.

Contractor shall supply a copy of their Lock Out/Tag Out Program to their NJM Point of Contact, the NJM Safety Coordinator, and/or NJM Safety Supervisor for review and approval, prior to any work beginning. Contractor's NJM point of Contact will coordinate with NJM's Maintenance and Engineering Groups regarding the Lock Out/Tag Out Program and will furnish the Contractor with any edits to the program.

Once on site, Contractor will be required to Coordinate their Lock Out/Tag Out Program with the NJM Maintenance and Engineering Groups, and any other Contractors working on site.

In advance of the work as a submittal, Contractor must identify all equipment that will required to be Locked Out / Tagged Out, how they will be secured by Lock Out / Tag Out, what other facility systems may be impacted, the duration, start and end dates, etc.

3.11 CRANE/LIFT OPERATIONS

For all projects involving crane operations, Contractor shall submit the following information to their NJM Point of Contact and NJM Safety Coordinator for review and approval prior to the start of any project:

- A detailed lift plan(s) including drawings or sketches of the crane set up, location of the crane, staging area of the crane, potential obstructions or restrictions to the crane, the crane's swing path, and identification of the crane access zone.
- Crane Annual Inspection Report, including the make and model of the crane.
- Crane Load Charts.
- Load specification data.
- Crane Operator Certification/Evidence of Training, which includes the National Commission for the Certification of Crane Operators NCCCO and the New Jersey Crane Operators License.
- Rigger & Signalman Qualifications/Evidence of Training, including the NCCCO Rigger & Signalperson Certification

Any crane or lift operations shall be set at least twenty (20) feet away from any overhead power lines.

3.12 CONFINED SPACE ENTRY

Prior to entering any Confined Space, Contractor shall notify their NJM Point of Contact and their NJM Safety Coordinator/NJM Safety Supervisor that work is going to begin.

Contractor is responsible for identifying all Confined Spaces with the scope of their work and construction limits.

When both NJM employees and Contractor are working in or near Confined Spaces, Contractor shall coordinate all operations with the affected NJM Personnel and the Safety Coordinator before any work begins.

Entering a Confined Space requires approval from NJM. In order to obtain such permission the following requirements must be met:

- Contractor shall supply all SDS sheets, in advance, for any chemicals the Contractor will be using in the Confined Space.
- The Contractor shall supply documentation of their "Confined Space Entry Program."
- The Contractor's "Confined Space Entry Program" must include the Contractor's Rescue Plan.
- Contractor shall provide appropriate documentation demonstrating that all training requirements for performing Confined Space work, including rescue operations, have been completed by all employees engaged in Confined space work.

3.13 FALL PROTECTION

Fall protection is required per OSHA requirements wherein: "fall protection [is to] be provided at elevations of four feet in general industry workplaces" and "six feet in the construction industry…" 29 CFR 1926.501. Additionally, OSHA requires fall protection is to be provided when working over dangerous equipment and machinery, regardless of fall distance.

When fall protection is required, Contractor, in advance of performing any work, must submit their Fall Protection Plan addressing the the planned use of warning lines, safety monitors, safety nets, guardrails,

personal fall arrest systems and/or other systems to their NJM Point of Contact and NJM Safety Coordinator. The plan shall also include the procedure for the rescue of employees.

When warning lines are included in the Contractor's Fall Protection Plan, Contractor will be required to define the proper use of said warning lines, supply the appropriate equipment, establish the locations for, erect, and maintain the warning lines.

When the use of fall protection harnesses and lanyards are included in the Contractor's Fall Protection Plan, the use of full body harnesses are required. Additionally, it is recommended that self-retracting lanyards are used. All harnesses and lanyards are to be maintained in good condition, free from any defects, and shall be secured to anchors capable of supporting a falling worker, meeting OSHA requirements. Anchors should not be overloaded. Contractor shall perform daily inspections to ensure fall protection equipment is in good condition.

3.14 PERSONAL PROTECTIVE EQUIPMENT

Contractor is responsible for providing the appropriate personal protective equipment ("PPE") to their employees for each task that is being performed by Contractor. All Contractor provided PPEs must meet OSHA standards for safety.

PPE includes, but is not limited to, head protection, eye protection, face protection, hand protection, hearing protection, foot protection, respiratory protection, fall protection, vests, and full body suits.

All PPE is to be inspected daily. All defective PPE shall be replaced immediately.

If PPE is to be used, a PPE program must be included in the Contractor's Project and Site Specific Safety Plan and Emergency Response Plan. Key points of the PPE Program include expected hazards, proper selection of PPE to mitigate those hazards, maintenance of the PPE, and proper usage of employees in the use of the PPE.

3.15 INJURIES AND MEDICAL EMERGENCIES

All injuries must be reported immediately.

Contractors that are injured while performing work for NJM will immediately report the injury to their supervisor. Contractor will then notify their NJM Point of Contact. It is the Contractor's responsibility to send the injured employee for medical attention and absorb any associated medical costs. Contractor will submit, within twenty-four (24) hours an incident report containing names, dates, location, description of incident, and injury.

Medical emergencies requiring immediate attention are to be reported to the Security Command Center at the NJM campus where the incident occurs. The Security Command Center will follow their procedures and emergency personnel will be summoned. (NJM security is trained to respond to such events and can ensure quick access of emergency personnel to the worksite). If 911 is called first, the Security Command Center should be contacted immediately thereafter. Please refer to the Project Directory for emergency contact numbers and emails, a copy of which is attached hereto as Attachment D.

There are times when conditions exist that create "Near Miss" situations while an injury may not have occurred, it is important to report these instances so that an evaluation can take place to prevent similar incidents. A "Near Miss" is an incident which no property was damaged and no personal injury was sustained, but where, given a slight shift in time or position, damage or injury easily could have occurred. Near misses also may be referred to as close calls, near accidents, accident precursors, injury-free events and, in the case of moving objects, near collisions. The same process is to be followed for a Near Miss situation as if an actual injury/incident did occur. Contractor will immediately report the Near Miss to their supervisor, who, in turn, will notify their NJM Point of Contact. Contractor will submit, within twenty four (24) hours, an incident report containing the names, dates, location, and a description of incident to NJM.

3.16 EVACUATION

NJM has developed the following evacuation guidelines that are to be followed during times of emergency:

- When the fire alarm sounds, act immediately. Cease operations when safe to do so and if possible, turn off all equipment, tools, etc.
- Walk to the nearest exit or stairway and leave the building.
- Never ignore or assume the fire alarm is false or the result of a test.
- Everyone must evacuate the building by way of the closest safe exit or stairway.
- Never use an elevator or escalator during a fire or similar building emergency. Use the closest safe stairway.
- Once outside of the building, move away from the structure to a safe distance and allow space to make sure others can exit.
- Once outside of the building, do not re-enter the building until told to do so by NJM. Specifically, NJM Security will advise when the fire department has given permission to reoccupy the building.

Emergency Egress Routes – Prior to beginning work, Contractors should become familiar with the egress routes in the area. Egress maps are located near the elevators and identify exits, egress routes, fire alarm pull stations and portable fire extinguishers.

4.0 ACKNOWLEDGEMENTS

4.1 GENERAL

Failure to adhere to the requirements provided in this Contractor Handbook may lead to the termination of the contract and/or consideration for future contracts for work with NJM. Contractor is responsible for meeting all federal, state and local regulations for the work to be performed. It is the explicit responsibility of Contractor to train and educate their employees in these subjects prior to working at NJM. NJM reserves the right to request any employee, agent, or subcontractor of Contractor to leave the site if their behaviors and/or work practices indicate a lack of necessary knowledge and/or skill sets. In these cases, Contractor is responsible for replacing the employee. Contractor is further responsible for ensuring any subcontractor work is conducted in accordance with relevant safety and health regulations.

4.2 ACKNOWLEDGEMENT FORM

I acknowledge that I have received and reviewed the NJM Contractor Handbook and shall fully abide by the contents of this Handbook. Furthermore, the information contained within this handbook has been discussed with my employees and all other persons working on this project under my direction and they have a full understanding of the policies and procedures expected by NJM.

Company Name: _____

Your Name: _____

(Please Print)

Signature: _____

Date: _____

Your Title: _____

ATTACHMENT A
PRE-WORK HAZARD ANALYSIS FORM

Project Name _____

Project Number _____

Work to be Performed _____

Contractor _____ Date Prepared _____

Foreman/Supervisor for the Job _____ Email _____ Phone _____

Contractor Employee Responsible for Safety Inspections _____ Email _____ Phone _____

Workers Who Will Be Briefed About This Analysis _____

_____ Date of Briefing _____

Instructions: Complete this form for all construction work. Identify all hazards that could be present in the job to be performed. If a box is checked "Yes", then state the hazard and describe your hazard control method. If a hazard is not listed below and is present in the job, then check the box for item 41 "Other" and *describe hazard and hazard control method.*

	YES	NO	
Example	☒	☐	**Fall Protection (including Ladders / Scaffolds / Stairways** – for example: Fall Protection Plan, Body Harness, Lanyards, Guardrails, Handrails, Training, other

Hazard – Employees will be using 6 foot A frame ladders

Control – If a greater height is required a platform lift or scissors lift will be used and the employee on the lift will use appropriate harness and self retracting lanyard.

	YES	NO	
1.	☐	☐	**Fall Protection (including Ladders / Scaffolds / Stairways)** – for example: Fall Protection Plan, Body Harness, Lanyards, Guardrails, Handrails, Training, other

Hazard _____

Control _____

2.	☐	☐	**Excavation / Trenching / Shoring** – for example: Excavation Permit, Selection of Protective Systems, Shoring, Slope Detail, Spoils Pile, Soil Classification, Sloping and Benching, Hydraulic Shoring, Access Ladders, Traffic Plates, other

Hazard _____

Control _____

3.	☐	☐	**Lockout and Tagout Control of Hazardous Energy** – for example: Locks and Tags, Blinds, Safety Meetings, Training, other

Hazard _____

Control _____

4.	☐	☐	**Electrical** – for example: Wiring Design, Wiring Protection, Hazardous Location Installation, other

Hazard _____

Control _____

5.	☐	☐	**Crane Operation / Hoisting / Rigging** – for example: Operator Permits, Equipment Inspections and Tags, Training, other

Hazard _____

Control _____

ATTACHMENT A
PRE-WORK HAZARD ANALYSIS FORM

6. ❑ ❑ **Confined Space –** for example: ESH Entry Approval/Permit, Training, Air Monitoring, Rescue Plan and Equipment, other
Hazard _____
Control _____

7. ❑ ❑ **Personal Protective Equipment –** for example: Hard Hats, Safety Glasses, Safety Goggles, Ear Plugs, Ear Muffs, Respirators, Air filters, Dust Masks, HEPA Filters, Gloves, Flame Resistant Clothing, Steel Toed Shoes, other
Hazard _____
Control _____

8. ❑ ❑ **Fire Protection/Prevention –** for example: Extinguishers, Fire Watch, 2-Way Radio, Pull Box, Alarms, other
Hazard _____
Control _____

9. ❑ ❑ **Hot Work Permit Required –** for example: Welding, Brazing, Torch Cutting, Temporary Heating, Pressured Air Line, other
Hazard _____
Control _____

10. ❑ ❑ **Power & Hand Tool Safety –** for example: Guards, Cords, Ground Prong, GFCI, Jacks, Abrasive Wheels, other
Hazard _____
Control _____

11. ❑ ❑ **Other –** Identify any other hazard control associated with this job
Hazard _____
Control _____

ATTACHMENT B-BB

NJM Policy Against Discrimination and Harassment

The NJM Insurance Group supports all Federal and State laws prohibiting discrimination based on race, color, age, national origin, sex, marital status, religion or disability. We seek to maintain a working environment that is free of discriminatory, hostile or abusive conditions. Words, gestures, actions or other behavior that tends to annoy, alarm, intimidate, ridicule, embarrass or insult employees in a manner that creates hostility on our premises will not be tolerated.

Harassment on the basis of sex is prohibited. Unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature constitute harassment when (1) submission to such conduct is made either explicitly or implicitly a term or condition of an individual's employment, (2) submission to or rejection of such conduct by an individual is used as the basis for employment decisions affecting such individual, or (3) such conduct has the purpose or effect of unreasonably interfering with an individual's work performance or creating an intimidating, hostile, or offensive working environment. Sexual harassment is also described as unwelcome conduct that is based on gender, whether the behavior is verbal or physical in nature, regardless of the peer, supervisory or other relationship between the parties, and regardless of whether the manifestation of the harassment is requests for sexual favors, sexist remarks, or behavior which denigrates a person because of the person's sex or sexual orientation.

Policy Against Violence in the Workplace

The NJM Insurance Group is committed to providing a safe and secure work environment for employees and others conducting business on its premises. We seek to maintain a working environment that is free of hostile or abusive conditions. Words, gestures, actions or other behavior that tends to alarm or intimidate employees, customers, and visitors in a manner that creates hostility on our premises will not be tolerated.

Violence in the workplace, or threatened violence in the workplace, is strictly prohibited. No reference to violence or joking about violence will be tolerated. All employees should be treated with courtesy and respect at all times.

The NJM Insurance Group prohibits the following types of behavior or similar activities:

- Threatening, intimidating, coercive, abusive, harassing, or violent verbal, written, or physical behavior, or the suggestion of such behavior, toward others, including coworkers, customers, and visitors
- Possession of firearms, knives, explosives, or other weapons anywhere on Company property (including in Company vehicles or in private vehicles on Company property) or while conducting Company business
- Fighting on Company property or while conducting Company business
- Willful destruction of Company property or the property of others

Office furniture and electronic equipment are the property of the NJM Insurance Group. We reserve the right to enter or inspect your work area including, but not limited to, desks, cabinets and computer hard drives and storage disks, with or without notice for just cause. We also reserve the right to inspect employees and their personal possessions should there be a reasonable suspicion that someone is in violation of this Policy.

The NJM Insurance Group expects employees (anonymously if they choose) to immediately report to Security:

- Actual acts of violent behavior
- Threatened violent acts
- Possession of firearms, knives, explosives, or other weapons anywhere on Company property (including in Company vehicles or in private vehicles on Company property) or while conducting Company business
- Willful destruction of Company property or the property of others

Complaint Filing and Investigation Procedures

Any employee who is the victim of violent conduct or threats of violence by a supervisor, coworker or any other person on our premises or within the context of a business relationship may seek advice or file a complaint as follows:

A complaint may be made in writing or orally to the complaining employee’s immediate supervisor, the Department Head, the Human Resources Director, the Director of the Special Investigations Unit or the General Counsel. Supervisory staff are to immediately inform the Human Resources Director, the Director of the Special Investigations Unit or the General Counsel of any complaint of violence or threatened violence. Upon communication of a complaint of conduct prohibited by this Policy, the matter will be investigated promptly.

Confidentiality

To the fullest extent practicable, inquiries and complaints will be kept confidential among the persons/parties necessary to resolve the matter.

Prohibition Against Retaliation

Retaliation in any form against any person who complains of violence or threatened violence in the workplace or who assists in the investigation of such complaints is expressly prohibited. A charge of retaliation may be raised at any step of the complaint procedure or may form the basis of a new complaint.

ATTACHMENT C

New Jersey Manufacturers Insurance Company
Confidentiality and Nondisclosure Agreement

This Confidentiality and Nondisclosure Agreement is effective upon execution, and if applicable, amends and is part of any agreement executed by and between New Jersey Manufacturers Insurance Company ("NJM") and _____ ("Contractor").

WHEREAS in the course of the parties' engagement, NJM may disclose certain confidential information to Contractor, including but not limited to information related to business processes and technological infrastructure and information related to policyholders and target audiences; and

WHEREAS NJM may have obligations to comply with regulations promulgated by the Federal Trade Commission pursuant to the Gramm-Leach-Bliley Act, 15 U.S.C., Subchapter 1, Section 6801-6809 (the "Act"); and

WHEREAS NJM may have obligations to comply with N.J.S.A. 17:23A-1 et seq., the New Jersey Insurance Information Practices Act; and

WHEREAS NJM may have obligations to comply with N.J.A.C. 11:1-44, Standards for Safeguarding Customer Information; and

WHEREAS NJM has provided its customers with a Privacy Rights Policy, which is subject to updates at any time without notice, a copy of which is available at www.njm.com/about/privacy; and

WHEREAS, under the NJM Privacy Rights Policy and the aforementioned laws, NJM must protect certain of its data containing consumer nonpublic personal information ("NPI") and wishes to ensure that Contractor shall protect all of NJM's customer information consistent with these laws, regulations, and the NJM Privacy Rights Policy.

NOW, THEREFORE, in consideration of the above background and other valuable consideration, the sufficiency of which is hereby acknowledged, Contractor hereby agrees to abide by the NJM Privacy Rights Policy, and to the following terms and conditions:

1. Contractor acknowledges that NJM may provide: (i) information and access to confidential/proprietary information, including but not limited to NPI, and information and access to information which otherwise is or should be reasonably understood by Contractor to be confidential/proprietary; and/or (ii) information and access to information about its business processes, technological infrastructure, customer lists, medical provider lists and provider payment data, marketing strategies, trade secrets, business requirements and nonpublic financial information (all of the foregoing (i) and (ii) shall be collectively ("NJM Information")). All such NJM Information is deemed to be confidential and shall not be disclosed to any third party. Such NJM Information shall be protected by Contractor in the same manner that Contractor's own confidential information is protected, but in no event with less than reasonable care. Disclosure of NJM Information shall only be made to Contractor's employees requiring such knowledge and shall be used only for the purpose for which it was disclosed.

2. In the event that Contractor is requested or required to disclose such confidential information pursuant to but not limited to, interrogatories, subpoenas or similar process, Contractor shall provide NJM with written notice of any such request for such information prior to disclosure so as to give NJM an opportunity to object.

3. If applicable, at the conclusion of this engagement, Contractor shall return any and all confidential NPI to NJM.

4. Contractor shall take reasonable steps to preserve the security, confidentiality and integrity of all NJM confidential proprietary information.

5. Trade secrets of NJM including but not limited to NJM's methods of business processes, customer lists, marketing strategies, and nonpublic financial information shall be received and held by Contractor in strict confidence and will be used only for the purpose of this engagement.

6. Contractor acknowledges that the disclosure of confidential/proprietary information without NJM's written consent, which consent shall not be unreasonably withheld, may give rise to continuing irreparable injury to NJM, that, therefore, will be inadequately compensable in damages at law. Accordingly, NJM shall be entitled to obtain immediate injunctive relief against the breach or threatened breach by Contractor of this Confidentiality and Nondisclosure Agreement, in addition to any other legal remedies which may be available, and Contractor consents to the obtaining of such injunctive relief.

7. Contractor agrees that it will notify NJM of any breach of security of the confidential and/or proprietary information described herein immediately following discovery.

ATTACHMENT C

8. This Confidentiality and Nondisclosure Agreement will be construed, interpreted, and applied in accordance with the laws of the State of New Jersey (excluding its body of law controlling conflicts of laws). The terms of this Confidentiality and Nondisclosure Agreement will override and control any conflicting term or condition of any other agreement entered between the parties hereto and shall apply with equal force to subsequent agreements entered into between the parties hereto.
9. This Confidentiality and Nondisclosure Agreement shall survive the termination of any agreement entered into by NJM and Contractor.
10. This Confidentiality and Nondisclosure Agreement may be amended or modified only by a written instrument signed by NJM and Contractor. Each such instrument shall be reduced to writing and shall be designated on its face as an amendment to this Confidentiality and Nondisclosure Agreement.

IN WITNESS WHEREOF, NJM and Contractor execute this Confidentiality and Nondisclosure Agreement effective on the last date below.

New Jersey Manufacturers Insurance Company	Contractor
By: _____	By: _____
Name (print): _____	Name (print): _____
Title: _____	Title: _____
Date: _____	Date: _____

ATTACHMENT D
PROJECT DIRECTORY

PROJECT INFORMATION		
Project Name:		
NJM Project Leader:		
Project Location:		
PROJECT INFORMATION		
NJM EMERGENCY #		
NJM Point of Contact:	Office Phone:	
Cell Phone:	Email:	
Alternate NJM Point of Contact:	Phone:	
NJM Safety and Security Supervisor:	Phone:	
NJM Safety and Security Coordinator:	Phone:	
NJM Security Command Center - *Site*	Phone:	
NJM Security Site Captain:	Phone:	
CONTRACTOR INFORMATION		
Name of Business:		
Address:		
City:	State:	Zip:
Telephone:		
Email:		
Fax:		

ATTACHMENT D
PROJECT DIRECTORY

Primary & Alternate Contacts:		
1.	Tel.	Cell
2.	Tel.	Cell
3.	Tel.	Cell
24-Hour Service #		
24-Hour Emergency Number(s) (if applicable)		

S P E C I F I C A T I O N S

for
RENOVATIONS TO SECOND FLOOR TOILET ROOMS AT
NJM WEST TRENTON BUILDING A-NORTH

PROJECT #WT.C.2024.009

NEW JERSEY MANUFACTURERS INSURANCE COMPANY
WEST TRENTON CAMPUS
301 Sullivan Way, West Trenton, NJ 08628

FVHD architects planners
EST 1918
Fraytak Veisz Hopkins Duthie, P.C.
1515 Lower Ferry Road, Trenton NJ 08618
WWW.FVHDPC.COM
George R. Duthie, AIA, PP
No. 21AI01299200
FVHD PROJECT #5578

KELTER & GILLIGO
CONSULTING ENGINEERS
196 Princeton-Hightstown Road
West Windsor, NJ 08550
Frank Tindall, P.E.
No. 24GE03865600

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END TABLE OF CONTENTS

SECTION 00800 - SUPPLEMENTARY GENERAL CONDITIONS

PART 1 - GENERAL

1.1 GENERAL

A. The following Supplementary General Conditions supplement the New Jersey Manufacturers Insurance Group General Conditions.

1.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

A. New Jersey Manufacturers (NJM) will submit Drawings and Specifications which are signed and sealed for purposes of obtaining NJ Uniform Construction Plan Review by the Municipal Construction Official having jurisdiction over the project to obtain Construction Permits.

1.3 SUBMITTALS

A. Shop Drawings, Product Data and Samples:

1. Contractor shall provide submittals for the Project with reference to Architect's Project and Specification Section Number. Contractor shall, within ten (10) calendar days from the Issue Date of the Notice of Award, forward to the Architect a written submittal log including all of the following information:
   a. A list of all required submission items grouped by technical section division number as set forth in the Specifications,
   b. If in variance with the Milestone Dates Specified in Section 01800, the dates upon which each submission will be made by the Contractor and the date by which the Contractor expects same to be returned to them by the Architect, allowing a reasonable time for review,
   c. Critical items and long lead items shall be so noted on the log,
   d. Submittals will be mandatory and shall meet time requirements established in other sections of the Bid Documents.
   f. The Contractor shall complete the entire submission process as soon as possible but in no event later than the time set forth in Section 01800 after the Notice of Award. Exceptions may be made if so noted on the submission log, with good reason, and subject to the Architect's approval.
   g. Omission of any required submittal item from the log does not relieve the Contractor of their obligation to make timely submissions of same. The Contractor shall keep their submission log up to date at all times. They will provide an updated copy to the Architect, at any time, upon request.

2. In accordance with NJM's shop drawing standard, the General Contractor shall submit all required shop drawings to FVHD Architects via email to sbrown@fvhdpc.com and Owner's Representative jgoliszewski@njm.com for their review.

3. All project submittals are to be complete and provide all information required by the Bid Documents including, but not limited to, model numbers, applicable technical requirements, selected features, color, finish, and other options. Improperly prepared submittals sent to the Architect will be returned without action. The Contractor is responsible to field verify all dimensions and conditions effecting the preparation of submittals and the Work.

4. Submittals provided by the Contractor on behalf of Subcontractors and suppliers must be reviewed for completeness and approved by the Contractor prior to submitting same to the Architect. The Contractor will be solely responsible for improperly prepared submittals.

5. Submittals are to be provided to the Architect consistent with the sequence of the proposed Work.

6. All fabricated work shall require shop drawings.

7. Submittal Procedures: The Contractor's failure to follow proper procedures for submittals constitutes grounds for withholding of payments until such time as the Contractor is in compliance. Proper submittal procedures include all of those set forth elsewhere in this Specification including the following:
   a. Failure to adhere to deadlines for completion of submittals and record/resubmittals.
   b. Failure to provide submittals in good order as required by the Bid Documents.
   c. Failure to provide submittals in relationship to the progress of the Work.
   d. Performance of Work or part of the Work, without complete approved submittals.

8. Architect's actions for submittals shall be as follows:
   a. Submittals returned to the Contractor marked "Approved" allow the Contractor to proceed with the Work.
   b. Submittals returned to the Contractor "Approved As Noted; "Resubmit For Record:"
      1) The Contractor may proceed with Work, however noted items by the Architect (or any affected portion of the submittal), must be corrected and resubmitted to the Architect's office within ten (10) working days of Contractor's receipt of the original submittal. Final acceptance of all work is subject to the Contractor's compliance with requirements of the Bid Documents.
   c. Submittals returned marked "Returned for Corrections" require the Contractor to resubmit corrected or alternate data in accordance with the corrections indicated.
   d. Submittals returned marked "No Action Taken:"
      1) The Contractor may not proceed with the Work. The Architect will not review submittals so marked until the Contractor has properly completed the submittal or corrected the reasons stated thereon.
      2) Reasons for "No Action Taken" on a submittal include, but are not

limited to the Contractor's failure to:

a) Submit an approved Subcontractor or supplier.
b) Indicate job specific product data such as catalog number, size, type or material on each submittal.
c) Submit complete data, test reports or similar information as required by the Bid Documents.
d) Obtain prior approval for substitution.
e) Submit documents in a legible or orderly fashion.
f) Adhere to any submittal requirements set forth in the Bid Documents.
g) Submit only submittals which are called for in the Bid Documents, other submittals will not be reviewed by the Architect.

e. Shop drawing submittals and color selection approvals by the Architect:
   1) The Contractor shall submit all shop drawing submittals within the specified time stipulated in Bid Documents.
   2) The Architect shall release/return to the Contractor the approved color selections.

9. Long Lead Items:
   a. In addition to and concurrent with the submission of the "Schedule of Values", Contractor shall submit a list of all materials, equipment or components which are anticipated to require more than four weeks delivery, together with scheduled ordering and delivery time table.
   b. This will be discussed and reviewed regularly at the job meetings.
   c. Upon request by the Architect, the Contractor shall be prepared to produce evidence of having placed orders for specific materials, equipment and components.

10. The Contractor will not be entitled to receive payment for Work performed by the Contractor for which submittals were required to be submitted for review and approval by the Architect. All Work installed in variance with the Bid Documents will be rejected.

1.4 PAYMENTS AND COMPLETION

A. SCHEDULE OF VALUES

1. Immediately after Award of Contract, the Contractor shall prepare and submit a Schedule of Values, breaking down all Work by type and Trade. Each scheduled value line item shall be for material and labor for each entity of Work.

2. Project soft costs including, but not limited to, bond, insurance, mobilization, supervision, submittals, punch-list, training, as-built drawings and close-out documents, shall be indicated in separate line items.

3. Project Allowances: Include all project allowance(s) at the end of the Schedule of Values to allow subsequent draw-down when authorized in writing by the Architect.

B. The Architect shall review applications and certifications for payment submitted by the Contractor which have been signed and certified, as required, by the Bid Documents. By submitting an application and certification for payment, the Contractor is representing that it has verified that all Work for which payment is being requested, has been completed in accordance with all the requirements of the Bid Documents.

C. The Architect's approval of the Contractor's certification for payment shall constitute a representation to the Owner, based on the Architect's evaluation of the Contractor's Work and on the data comprising the Contractor's Application for Payment, that, to the best of the Architect's knowledge, information and belief, and, based on periodic on-site observations, the Work has progressed to the point indicated and that the quality of the Work is in accordance with the Bid Documents. The Architect is not responsible to provide continuous observation of the Work.

1.5 SUPERVISION AND CONSTRUCTION PROCEDURES

A. The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences and procedures for coordinating all portions of the Work under the Contact unless the Bid Documents give other specific instructions concerning these matters. of construction and safety measures on the site.

B. The Contractor is responsible to verify all conditions and measurements in the field. The Architect shall periodically visit the site at intervals appropriate to the stage of construction or as otherwise required to become familiar with the progress and quality of the portion of the Work completed, and to determine, in general, if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Bid Documents.

C. The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

D. The Architect shall no have control over, charge of, or responsibility for the construction means, methods, techniques, sequence or procedures, or for safety precautions and programs in connection with the Work, nor shall the Architect be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Bid Documents.

END OF SECTION 00800

SECTION 00850 - CONTRACT DRAWINGS

1.1 All Drawings listed on Drawing No. G001, "Title Sheet and Drawing Index," dated November 8, 2024, unless otherwise revised or amended (via Addenda, etc.), shall form a part of the Bid Documents.

END OF SECTION 00850

SECTION 00870 - MISCELLANEOUS REQUIREMENTS

PART 1 - GENERAL

1.1 JOB SITE MEETINGS

A. Regularly scheduled job meetings shall be held at a location and time convenient to the Owner's Representatives, the Architect and the Contractor. The Prime Contractor shall attend such meetings, or be represented by a person in authority who can speak for and/or make decisions for the Contractor.

B. Attendance by the Contractor is mandatory, whether the meetings are weekly, bi-weekly or at whatever interval is determined by the Architect.

1.2 STRUCTURAL SAFETY STANDARDS AND CODES

A. The standards, codes and design data referred to in the New Jersey "State Uniform Construction Code", apply to the work of the Contract, where applicable.

B. Contractor shall comply with all applicable requirements of the Uniform Fire Safety Act, N.J.S.A. 52:27D-192 et seq.

1.3 OWNER'S GENERAL REQUIREMENTS

A. The Owner requires that the Contractor demonstrate a safety and health program/plan, which includes, but is not limited to first aid, fire protection, housekeeping, illumination, sanitation, personal protective equipment, medical, exit, emergency action plans and all other issues required by government Agencies Having Jurisdiction over the Work of this project.

B. The Contractor shall comply with all provisions of the NJM Contractor’s Handbook issued as part of this bid package.

1.4 ENVIRONMENTAL PROTECTION

A. Conform to New Jersey Department of Environmental Protection Regulations N.J.A.C. 7:27, sub-chapters 5 and 7 and all other applicable standards.

B. Conform to New Jersey Statute N.J.S.A. 26:2C-9.2 which requires that no person shall construct, install, alter or operate any equipment capable of causing the emission of air contaminants into the open air or control apparatus which prevents or controls the emission of air contaminants until an application has been filed with and approved by the Department of Environmental Protection.

1.5 OPERATION AND MAINTENANCE

A. Contractor shall furnish to the Owner all required operation and maintenance manuals for all included materials and equipment as well as assistance and training

to the Owner's personnel for Contract's special systems and equipment in accordance with Bid Documents.

END OF SECTION 00870

SECTION 01010 - SUMMARY OF WORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The Work of this Section applies to all Construction Bid Documents including Drawings, Division 1 - Miscellaneous Requirements Sections and Specifications Sections included in Part-2 through Part-6.

1.2 SUMMARY

A. Section Includes:

1. Project description.
2. Contract scope description.
3. Contractor's use of the premises.
4. Preconstruction meeting.
5. Security procedures.

1.3 PROJECT DESCRIPTION

A. The project consists of the Renovations to Second Floor Toilet Rooms at NJM West Trenton Building A-North, West Trenton, New Jersey, Mercer County, New Jersey.

B. Bid Documents prepared by Fraytak Veisz Hopkins Duthie, P.C. Architects / Planners, (Project Number: FVHD-5578) and their Consulting Mechanical/Electrical Engineer: Kelter & Gilligo Consulting Engineers, Princeton Junction, NJ.

1.4 CONTRACT SCOPE DESCRIPTION

A. The work consists of but is not limited to the following:

1. Renovations to the Second Floor Toilet Rooms (M2 and W2) and Janitor’s Closet (J2) located in Building A - North:
   a. Remove and replace toilet fixtures,
   b. Remove and replace toilet accessories,
   c. Remove and replace tile floor and wall finishes,
   d. Remove and replace suspended acoustic tile ceiling system,
   e. Remove indicated walls to access plumbing chase, provide and install concrete masonry units (cmu) wall assembly,
   f. All plumbing, sprinkler, mechanical and electrical system work as indicated on the Drawings.
   g. Remove and replace the HVAC ductwork & registers,
   h. Remove and replace the lighting fixtures and associated work,
   i. Provide temporary support of the existing fire alarm smoke detectors while the ceiling work is being replaced, reconnect existing devices in new locations as indicated on the Drawings.

j. Provide temporary support of the existing ceiling mounted speakers while the ceiling work is being replaced, reconnect existing speakers in new locations as indicated on the Drawings.

2. All other indicated work.

B. Single Overall Contract: This Contract includes:

1. All work in accordance with Drawings, Parts 2, 4, 5 and 6 Specification Sections and in accordance with Bid Documents.

2. General Construction Work includes:
   a. Work that is primarily architectural in nature plus work traditionally recognized as general construction in accordance with Drawings and as listed as a part of Part 2 Specification sections, unless otherwise indicated below:
      1) Also includes both administrative and coordination responsibilities.
         a) General Construction Contractor is responsible for all coordination between their work and work of all Subcontractors.

3. Plumbing, Drainage and Sprinkler System Work includes:
   a. Piping servicing domestic water piping, drainage and sprinkler systems and connection of equipment tied into the above types of systems and including all work in accordance with Drawings and Part-4 Specification sections.
      1) Work shall include demolition and removals, as indicated or required, to allow for new construction.
      2) Work shall include reinstallation, cutting, patching, finishing and repair work associated with Plumbing, Drainage and Sprinkler system Work, as indicated or required, cutting, alterations, replacement Work, where indicated or required.

4. Heating, Ventilating, Air Conditioning and Refrigeration Work includes:
   a. Heating, ventilating, and air conditioning systems as well as the temperature control systems and including all work in accordance with Drawings and Part-5 Specification sections.
      1) Work shall include demolition and removals, as indicated or required, to allow for new construction.
      2) Work shall include reinstallation, cutting, patching, finishing and repair work associated with HVACR Work, as indicated or required.

5. Electrical Work includes:
   a. The work necessary for electrical power distribution, lighting, and the connections to equipment tied into such systems, including all Work in accordance with Drawings and Part-6 Specification sections.
      1) **Work shall include power distribution and wiring for all indicated electrically operated equipment and fixtures, (in Parts 2, 4, 5 and 6), whether shown or not on Drawings.**
      2) Work shall include demolition and removals, as indicated or required, to allow for new construction.

3) Work shall include reinstallation, cutting, patching, finishing and repair work associate with Electrical Work, as indicated or required.

1.5 CONTRACTOR'S USE OF THE PREMISES

A. The space available to the Contractor for the performance of the work, either exclusively or in conjunction with others performing other construction as part of the project, is shown on the Drawings.

1. Other areas are off limits to all construction personnel.

B. The following building facilities may not be used by construction personnel:

1. Food service facilities, including dining areas.

C. The Owner occupy the building during the construction period.

1. The Owner will endeavor to cooperate with the Contractor's operations when the Contractor has notified the Owner in advance of need for changes in operations in order to accommodate construction operations.

2. Conduct the work so as to cause the least interference with the Owner's operations.

D. All deliveries by the Contractor shall be coordinated with the Owner's Representative, prior to the delivery date.

1.6 PRECONSTRUCTION MEETING

A. A preconstruction meeting will be held at a time and place designated by the NJM Representative / Architect for the purpose of identifying responsibilities of the NJM Representative / Architect's personnel and explanation of administrative procedures.

B. The Contractor shall also use this meeting for the following minimum agenda:

1. Construction schedule.
2. Use of areas of the site.
3. Delivery and storage.
4. Safety.
5. Security.
6. Cleaning up.
7. Subcontractor procedures relating to:
   a. Submittals.
   b. Change orders.
   c. Applications for payment.
   d. Record documents.

C. Attendees shall include:

1. The Owner / Owner's Representative.
2. The Architect, and any Consultants.
3. The Prime Contractor and their superintendent.
4. Major Subcontractors, suppliers, and fabricators.
5. Others interested in the work.

1.7 SECURITY PROCEDURES

A. Limit access to the site and building to persons involved in the Work.

B. Provide secure storage for materials for which the Owner has made payment and which are stored on-site.

C. Secure completed work, as required, to prevent loss.

D. The Contractor, and their employees, will be required to be registered with the NJM Representative.

1. The Contractor's personnel and Subcontractors will be required to wear identification badges at all times on the site.

END OF SECTION 01010

SECTION 01040 - COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The Work of this Section applies to all Bid Documents including Drawings, Division 1 - Miscellaneous Requirements Sections and Specifications Sections included in Part-2 through Part-6.

1.2 REQUIREMENTS INCLUDED

A. Coordination of submittals.

B. Coordination meetings.

C. Coordination drawings.

D. Coordination of project closeout.

E. Administrative/supervisory personnel.

F. Coordination of trades.

G. Coordination of space.

H. Coordination of field measurements and field conditions.

1.3 GENERAL REQUIREMENTS

A. The Prime Contractor shall coordinate their activities with the activities of Subcontractors and Work performed by others.

B. If necessary, inform each party involved, in writing, of procedures required for coordination; include requirements for giving notice, submitting reports, and attending meetings.

1. Inform the Architect when coordination of their work is required.

1.4 COORDINATION OF SUBMITTALS

A. Coordinate and correlate the submittals on each work item and on interrelated work items to ensure their timeliness, completeness, consistency, compatibility and compliance with the Bid Documents.

B. Prepare and submit special coordination drawings where close and careful coordination of information is required for proper fabrication or installation of materials, products or equipment by separate entities. Coordination Drawings may

also be required where limited space availability necessitates close and careful coordination for efficient and proper installation of different components.

1. Show interrelationships of components shown on separate shop drawings.

2. Indicate required installation sequences.

3. (See also the requirements for the general coordination Drawings under paragraph 1.7 below).

C. Coordinate any request for substitution to ensure compatibility of its space requirements, its operating characteristics and elements and its effects on other Work. Prior to proposing a substitution for any item, verify that its size, configuration, supports and connections will coordinate with all other work and that it will fit within the allotted space while allowing for proper operating, maintenance and circulation space.

D. Comply with requirements for requests for submittal of substitution indicated in the NJM Front End Documents and Section 00800.

1.5 COORDINATION MEETINGS

A. The General Construction Work Contractor shall hold additional coordination meetings and conferences with Subcontractors and others involved in the Work as needed to ensure coordination of work.

1. Notify the Architect of such coordination meetings.

B. Regular project site meetings shall be in accordance with Sections 00870 and 01200.

1.6 COORDINATION OF TRADES

A. Coordinate construction activities included under various sections of these Specifications to ensure efficient and orderly installation of each part of the Work and to prevent interferences among parts of the Work. Coordinate Work items and construction operations included under different sections of the Specifications that are dependent upon one another for proper installation, connection and operation.

1. Where installation of one part of the Work is interrelated with installation of other components, schedule construction activities in the sequence required to obtain the best results.

2. Where availability of space is limited, coordinate installation of different components to prevent interferences and to ensure proper accessibility for required maintenance, service and repair.

3. Make adequate provisions to accommodate items scheduled for later installation.

B. Where necessary, prepare memoranda outlining special procedures required for coordination. Include such items as required notices, reports and attendance at meetings. Distribute these coordination memoranda to all parties involved in the work being coordinated.

1. Prepare similar memoranda for the Owner and Subcontractor(s) where coordination with construction or operations by them is required.

2. Provide copies of such coordination memoranda to the Architect.

C. Coordinate the scheduling and timing of required administrative activities with other construction activities to avoid conflicts and ensure orderly progress of the Work. Administrative activities include:

1. Preparation and updating of schedules.
2. Preparation and processing of submittals.
3. Preparation and processing of requests for information.
4. Project meetings.
5. Testing and inspection activities.
6. Project close-out activities.

1.7 COORDINATION DRAWINGS

A. General Requirements: Prepare coordination Drawings where limited space available may cause conflicts in the locations of installed products, and where required to coordinate installation of products.

1. In preparing the coordination Drawings, large scale details as well as cross and longitudinal sections shall be developed, as required, to fully delineate all conditions. Particular attention shall be given to the locations, size and clearance dimensions of equipment items, shafts and similar features.

2. In preparing the coordination Drawings, minor changes in duct, pipe or conduit routing that do not affect the intended functions may be made, as required, to avoid space conflicts, when mutually agreed, but items may not be resized or exposed items relocated or other features affecting the function or aesthetic effect of the building changed without the Architect's prior review and acceptance. It should be assumed that no changes shall be made in any wall or chase locations, ceiling heights, door swings or locations, or window or other openings. If conflicts or interferences cannot be satisfactorily resolved, then the Architect shall be notified and their determinations obtained. Any conflicts or design deviations shall be specifically identified on Drawings submitted to them.

3. The coordination Drawings shall be submitted, in all cases, in ample time to avoid construction delay. The coordination Drawings submitted may lack complete data in certain instances pending receipt of shop drawings, but sufficient space shall be allotted for the items missing, as evidenced by the sign-

off of the party responsible for the missing items. When the missing information is available, it shall be promptly incorporated in the composite drawings.

4. Cost and time impacts of relocating any duct, pipe, conduit, or other material that has been installed without proper coordination between all trades involved will be charged to the responsible party. If any improperly coordinated work or work installed that is not in conformance with the approved coordination composites necessitates additional work, the cost and time impacts of all such additional work shall likewise be the responsibility of the affective party. The Architect shall be the sole judge in determining all responsibilities.

5. All changes in the scope of work due to revisions formally issued and approved shall be shown on the composite Drawings.

6. All work on the coordination Drawings shall be performed by a competent draftsmen and shall be clear and fully legible. The Architect shall be the judge of the legibility of the composite drawings.

7. In particular, prepare the following coordination Drawings:
   a. Drawings showing all piping, duct, cabletrays, electrical ductbanks, and similar items, but not electrical conduit less than 4 inches in diameter.
   b. Complete architectural, mechanical and electrical reflected ceiling layouts, (including ductwork, conduits, piping, lighting, etc.).
   c. Special coordination drawings are to be provided for the following:
      1) Where space is limited, show plan and cross-section dimensions of space available, including structural obstructions and ceilings as applicable.

B. The Prime Contractor shall prepare the coordination Drawings required for their work.

C. Layout Drawings: As soon as practical, but in no case starting later than thirty (30) days after the General Contractor has received the notice to proceed, the HVACR Work Subcontractor shall prepare layout Drawings of all duct work and piping at not less than 3/8" scale.

1. These Drawings shall show registers, grilles, diffusers and similar features, as well as locations of all units, valves, dampers and other items requiring access for service and maintenance.

2. The Drawings shall also show floor and wall openings, reflected ceiling layouts, structural beams, framing and miscellaneous structural steel supports, ceiling heights, walls, floor to floor dimensions, structural columns, doors and other major architectural and structural features as shown on the Architectural Drawings and as per approved shop drawings.

D. Composite Drawings:

1. The HVACR Work Subcontractor shall, as scheduled by the General Contractor, produce a mylar, two (2) prints and one (1) sepia of each layout Drawing as described.

2. The sepia will be retained for their records while the mylar and two (2) prints will be formally transmitted to the Plumbing Subcontractor, with copies of the transmittal to the Architect.

3. These Drawings must be hand delivered or sent via a reliable mailing service that provides receipts and guarantees 24-48 hour delivery.
   a. Common carrier mailing will not be acceptable.

4. The Plumbing Work Subcontractor, upon receipt of these mylars, will transfer the work from their shop drawings to the mylars, at the same time indicating where conflicts exist between their work and the work already shown on the mylars.
   a. The Plumbing Work Subcontractor will utilize a green colored pencil for the layout of their work.
   b. After completion, the Plumbing Subcontractor will forward the mylars and two (2) prints to the Electrical Subcontractor while retaining a sepia for their records.
   c. The same mailing procedures will pertain.

5. The Electrical Work Subcontractor will duplicate the procedure outlined above, utilizing orange colored pencil for their layout.
   a. After completion the Electrical Subcontractor will forward the Drawings as specified above to the Fire Protection Work Subcontractor, (Plumbing Work Subcontractor), who will layout their work with a red pencil and, after completion, forward the Drawings to the General Contractor, retaining a sepia for their records.

6. The General Construction Work Contractor shall then have the HVACR's instrumentation (ATC) Work Subcontractor review the completed composite Drawings and attest to their concurrence that their work can be installed without conflict.

7. The General Construction Work Contractor will schedule coordination meetings on the job site to review the coordination Drawings.
   a. These meetings will be attended by a representative from each of the Subcontractors involved in the coordination process.
   b. At these meetings, these Subcontractors will indicate where conflicts exist and resolve the conflicts through mutual agreement.
   c. Should an impasse occur, the Architect will determine the resolution.

8. When all conflicts are resolved, the Subcontractors will indicate their agreement by signing these final composite Drawings.

9. The Drawings shall be signed-off by each of the involved Subcontractors, indicating their awareness of and agreement with the indicated routings and layouts and their interrelationship with the adjoining or contiguous work. The General Contractor shall then sign these final composite Drawings.

10. The final composite Drawings shall be completed and signed-off by all parties no later than ninety (90) calendar days after the General Construction Work Contractor has received the Notice to Proceed.
    a. After the final composite Drawings have been agreed upon and signed by the Subcontractors and by the General Construction Work Contractor, the General Construction Work Contractor shall provide and distribute prints to each of the Subcontractors, and four (4) sets of prints to the Architect for reference and record purposes.
    b. The record copies of the signed-off final composite Drawings shall be retained by the General Construction Work Contractor and each Subcontractor as working reference documents.
    c. All shop drawings, prior to their submittal to the Architect, shall be compared with these composite Drawings and developed accordingly.
        1) Any revisions to the composite Drawings which may become necessary during the progress of the work shall be noted by the General Construction Work Contractor and by each affected Subcontractor and shall be neatly and accurately recorded on their record copies.

11. The General Construction Work Contractor and each Subcontractor shall be responsible for the up-to-date maintenance of their record copies of the composite Drawings and for having one up-to-date copy available at the site.

12. The composite Drawings, incorporating any subsequent changes thereto, shall be utilized by the General Construction Work Contractor or each Subcontractor in the development of their record Drawings.

13. Following sign-off of the final composite Drawings, no deviations will be permitted without prior review and acceptance by the Architect.
    a. Unauthorized deviations will be subject to removal and correction at no additional cost to the Owner.

14. In areas where no HVAC work occurs, but where other mechanical and electrical installations are required, each involved Subcontractor shall be responsible for their own work and shall cooperate, as directed by the General Construction Work Contractor, in preparing similar layout and composite Drawings.

1.8 COORDINATION OF PROJECT CLOSEOUT

A. Coordinate completion and clean-up work and administrative activities in preparation for Substantial Completion and occupancy of the Work or of designated portions of the Work.

B. After Owner occupancy, coordinate access for completion or correction of the Work not in conformance with the Bid Documents to minimize disruption of Owner's activities.

C. Assemble and coordinate closeout submittals specified in Section 01700.

1.9 REQUIRED ADMINISTRATIVE / SUPERVISORY PERSONNEL

A. General: In addition to the other administrative and supervisory personnel required for the performance of the Work, the Prime Contractor shall provide specific coordinating personnel as specified herein.

B. Project Manager / Superintendent: A full time on site Project Manager, with a recommended minimum of eight (8) years experience, including project management experience on a similar type of projects.

1. The Contractor for General Construction Work shall provide a full-time staff member or members, (Project Manager/Superintendent), experienced in coordination of mechanical and electrical Work on projects of this type and scale, including administration and supervision.
    a. Responsibilities:
        1) Coordinate all mechanical, plumbing, and electrical Work, and coordinate that Work with the other Work of the project.
        2) Where space is limited, coordinate arrangement of mechanical, electrical, and other Work to fit.
        3) Coordinate cutting and patching activities and sequencing.
        4) Coordinate use of temporary facilities.
    b. Prepare coordination Drawings where required and where indicated.
    c. Provide information to the entity preparing the progress schedule.
    d. Participate in progress meetings; report progress, changes required in schedules, and unresolved problems.
    e. Review submittals for compliance with the Bid Documents and for coordination with other Work.
    f. Check field dimensions, clearances, relationships to available space, and anchors.
    g. Check compatibility with equipment, other Work, electrical characteristics, and operational control requirements.
    h. Check motor voltages and control characteristics.
    i. Coordinate controls, interlocks, wiring of switches, and relays.
    j. Coordinate wiring and control diagrams.
    k. Review the effect of changes on other Work.
    l. Obtain and distribute installation data on each item of equipment requiring mechanical or electrical connections; include:
        1) Electrical power characteristics.
        2) Control wiring requirements.
    m. Observe and maintain record of tests and inspections.
    n. Observe work for compliance with Bid Documents and notify the

applicable Subcontractor in writing of observed defects in the Work.

o. Coordinate and observe startup and demonstration of equipment and systems.
p. Coordinate maintenance of record documents.
q. Assist the Architect with final inspections.

2. Subcontractor(s) shall provide staff for coordination between trades. Staff requirements noted above represent the minimum full-time on site staff required.

3. Staffing is subject to Owner / Architect's approvals.

4. Staff members may not be removed or replaced without Owner/Architect's approvals.

5. Staff name(s), duties and resumes are to be submitted to the Architect for approval within fifteen (15) days of the Notice to Proceed.

1.10 COORDINATION OF TRADES

A. Coordinate Work with other trades to eliminate any possible interference before any piping, conduit, equipment, devices, controls, supports, ductwork and fixtures are installed.

B. Where multiple items of mechanical and electrical equipment, devices, piping, conduits, supporting metal work, hangers, pull boxes, outlets, ductwork or controls are shown on any of the Bid Documents of the various trades in the same location, coordinate and adjust items to fit within designated location(s).

C. Provide and install necessary offsets, bends, turns and modifications in piping, ductwork, conduit and devices required to install the work without interference with that of other trades or structure, without additional cost to the Owner.

D. For products specified to be furnished by one (Sub)Contractor and installed by another (Sub)Contractor:

1. (Sub)Contractor specified to furnish (or remove) product shall be responsible for delivery to (or return from) the project site, and shall pay transportation costs.

2. (Sub)Contractor specified to install product shall be responsible for coordinating product delivery, loading or unloading, storing, protecting and installing product, as required.

1.11 COORDINATION OF SPACE

A. Coordinate use of available space and sequence of installation for Work (e.g., mechanical and electrical Work) which is indicated diagrammatically or schematically on the Drawings. Prevent physical interference of components. Follow routing

shown for pipes, ducts and conduits, taking into account the limitations of available space; make runs parallel with lines of building. Utilize space efficiently to ensure proper installations (including installation of other Work) and accessibility for maintenance, service and repairs.

B. Detailed Drawings of proposed departures from spatial arrangements or locations indicated in the Bid Documents, due to field conditions or other causes, shall be submitted to the Architect for review. No such departures shall be made without prior review by the Architect.

C. Where required for coordination, the Architect will have the authority to order, as changes in the Work, changes in locations and sizes of piping, ductwork conduit, raceways and ducts. Such changes shall be made without adjustment to the Contract Sum or Contract Time.

D. Field verify measurements of existing items and Work which precedes each sequence. Ensure proper fit and location.

E. In finished areas, conceal pipes, ducts and wiring in the construction.

F. Coordinate locations of fixtures and outlets with finish elements.

1.12 COORDINATION OF FIELD MEASUREMENTS AND FIELD CONDITIONS

A. Prior to ordering materials or equipment or performing work, the Contractor and/or Subcontractors shall verify Bid Document and submittal of dimensions and weights affecting their work and other Contractor's work associated with field measurements and field conditions at the project site, and shall be responsible for their accuracy and correctness.

B. Differences discovered from dimensions or weights indicated in the Bid Documents or submittals shall be submitted in writing to the Architect for review, before proceeding with the Work.

C. Commencing Work implies acceptance of surfaces, areas, preceding Work and other field conditions, and verification of dimensions by the (Sub)Contractor.

D. No Change Order will be issued in cases where discrepancies in dimensions are discovered after Work has been commenced or where the (Sub)Contractor has failed to properly investigate and take into account field measurements and existing field conditions.

E. Inspection of Conditions: Require the Installer of each major component to inspect both substrate and conditions under which their Work is to be performed. Do not proceed until unsatisfactory conditions have been corrected in an acceptable manner.

F. Recheck measurements and dimensions, before starting each installation.

1. Submit to the Architect for review any change in dimensions shown on the Bid Documents or submittals affecting physical size, shape or location of any part of the work, whether due to field conditions or other causes.

G. Passage of equipment:

1. If any structure, equipment or system must be altered to allow passage of equipment, the (Sub)Contractor or entity responsible for providing that structure, equipment, or system shall restore it to its original condition, without additional cost to the Owner.

2. Manufacturer's Instructions: Comply with manufacturer's installation instructions and recommendations, to the extent that those instructions and recommendations are more explicit or stringent than requirements contained in Bid Documents.

H. Verify the size of shafts and chases, the adequacy of partition thickness and the clearance in double partitions and hung ceilings for proper installation of work.

1. (Sub)Contractors shall cooperate in arranging their Work with other (Sub)Contractors whose Work is in the same spaces.

2. The amount of space occupied by each Trade's Work shall be kept to the minimum required.

3. Arrange for chases, slots and openings in other building components during progress of construction, to allow for timely installation of Work.

I. Inspect materials or equipment immediately upon delivery and again prior to installation. Reject damaged and defective items.

J. Provide attachment and connection devices and methods necessary for securing work. Secure Work true to line and level. Allow for expansion and building movement.

K. Provide all appropriate structural supports, hangers, and associated assemblies which include but are not limited to materials, finishes, equipment, fixtures, piping, raceways, mechanical and electrical components. This Work shall be in conformance with requirements of the Bid Documents whether or not indicated by a reference in Specification or as may be in detail shown on Drawings and schedules.

L. Visual Effects: Provide uniform joint widths in exposed work. Arrange joints in exposed work to obtain the best visual effect. Refer questionable choices to the Architect for final decision.

M. Install each component during weather conditions and construction status that will ensure best possible results. Isolate each part of completed construction from incompatible material as necessary to prevent deterioration.

N. Coordinate temporary enclosures with required inspections and tests, to minimize necessity of uncovering completed construction for that purpose.

O. Where mounting heights are not indicated:

1. Install individual components at standard mounting heights recognized within the industry for the particular application indicated. Refer questionable mounting height decisions to the Architect for final decision.

2. Install mechanical and electrical systems, materials and equipment to provide maximum possible headroom. Maintain maximum headroom and space conditions. Where headroom or space conditions (less than 8'-0") appear inadequate, the Architect shall be notified before proceeding with the Work.

END OF SECTION 01040

SECTION 01050 - ALTERATIONS, CUTTING, PATCHING AND REFINISHING WORK

PART 1 - PRODUCTS

1.1 RELATED DOCUMENTS

A. The work of this Section applies to all Construction Bid Documents including Drawings, Division 1 - Miscellaneous Requirements Sections and Specifications Sections included in Part-2 through Part-6.

1.2 DESCRIPTION

A. Work included: Alterations, removals and demolition required for this Work include, but are not necessarily limited to:

1. Alterations, cutting, patching, removal and preparation Work to be done as noted on Drawings, as required, to complete construction.

2. Patching and refinishing of existing surfaces damaged or left unfinished as a result of this Work, including site Work, existing ground surfaces, concrete surfaces, bituminous paving surfaces, etc.

3. This project shall be subject to the requirements of the EPA "Renovation, Repair and Painting" rule including the following:
   a. The Contractor must be lead safe trained and certified. The Contractor will be required to submit a copy of their EPA certificate prior to the start of the work.
   b. The Contractor shall provide the Owner with a copy of the EPA's Lead Hazard Management information pamphlet "Renovate Right-Important Lead hazard Information for Families, Child Care Providers and Schools" prior to the start of any renovation work. The Contractor shall have the Owner sign a pre-renovation disclosure form confirming receipt of the pamphlet.
   c. The Contractor shall at all times employ lead safe practices as identified in the rules.

4. This project shall be subject to the requirements of the EPA rules on diesel exhaust and off-site particulate dust, including the following:
   a. Diesel exhaust contributes the highest cancer risk of all air toxics in New Jersey and is a major source of NOx within the state. Therefore, per NJ DEP recommendations, construction projects involving non-road diesel construction equipment operating in a small geographic area over an extended period of time shall implement the following measures to minimize the impact of diesel exhaust:
      1) All on-road vehicles and non-road construction equipment operating at, or visiting, the construction site shall comply with the three minute idling limit, pursuant to N.J.A.C. 7:27-14 and N.J.A.C. 7:27-15.

Contractor shall purchase "No Idling" signs to post at the site to remind Subcontractors to comply with the idling limits. Signs are available for purchase from the Bureau of Mobile Sources at 609/292-7953 or http://www.stopthesoot.org/sts-no-idle-sign.htm.

2) All non-road diesel construction equipment greater than 100 horsepower used on the project for more than ten days shall have engines that meet the USEPA Tier 4 non-road emission standards, or the best available emission control technology that is technologically feasible for that application and is verified by the USEPA or the CARB as a diesel emission control strategy for reducing particulate matter and/or NOx emissions.

3) All on-road diesel vehicles used to haul materials or traveling to and from the construction site shall use designated truck routes that are designed to minimize impacts on residential areas and sensitive receptors such as hospitals, schools, daycare facilities, senior citizen housing, and convalescent facilities.

b. Contractor will be liable for the effects of off-site particulate dust and/or odors during construction and shall take steps to minimize the impact of air pollution from these activities.

B. Related Sections:

1. Section 00870 - Miscellaneous Requirements.

2. Section 01010 - Summary of the Work.

3. Section 01040 - Coordination.

4. Section 02070 - Selective Demolition.

5. **Division 2 through 16 Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.**

a. Requirements in this Section apply to mechanical and electrical installations. Refer to Divisions 15 and 16 Sections for other requirements and limitations applicable to cutting and patching mechanical and electrical installations.

1.3 SUBMITTALS

A. Cutting and Patching Proposal: Submit a proposal describing procedures at least 10 days before the time cutting and patching will be performed, requesting approval to proceed. Include the following information:

1. Location and Extent of Work: Submit key plan indicating room location where Work to take place. Describe cutting and patching, indicate methods and show how they will be performed.

2. Changes to Existing Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building's appearance and other significant visual elements.

3. Products: List products to be used and firms or entities that will perform the Work. Provide samples and field mock-up as indicated or requested by the Architect.
   a. Samples and field mock-up shall match existing surfaces and colors.
   b. Obtain Architect's approval prior to proceeding with Work.

4. Schedule and Dates: Provide Work schedule, indicate when cutting and patching will be performed.

5. Utilities: List utilities that cutting and patching procedures will disturb or affect. List utilities that will be relocated and those that will be temporarily out of service. Indicate how long service will be disrupted.

6. Structural Elements: Where cutting and patching involve adding reinforcement to structural elements, obtain approval of cutting and patching proposal before cutting and patching. Approval does not waive right to later require removal and replacement of unsatisfactory Work.

1.4 QUALITY ASSURANCE

A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.

B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. Coordinate cutting of operating elements with other plumbing, HVAC, electrical or other trades.

C. Miscellaneous Building Elements: Do not cut and patch any building elements or related components in a manner that could change their operation, load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.

D. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

   1. Engage experienced installers or fabricators for all Work.

E. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

F. Mock-Ups: Provide mock-ups for Architect approval for each proposed patching method. Do not proceed with patching work until obtaining of approvals from the Architect.

1.5 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties. Confirm existing warranties with Owner prior to starting of Work.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Comply with requirements specified in other Sections of these Specifications.

B. Existing Materials: Use materials identical to existing materials. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.

1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of existing materials.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.

1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

B. Inspection:

1. Prior to start of any Work, the General Construction Work Contractor shall verify all existing work area conditions; building lines, lengths, corners and all other dimensions.
   a. General Construction Work Contractor shall engage a Licensed Professional Land Surveyor (PLS) to perform layout of the building elements. Copies of all surveys performed by the General Contractor shall

be submitted to the Architect in two copies and shall include layout Drawings and data sheets.

2. The General Construction Work Contractor shall submit information and survey to their Subcontractors, the Architect for all required coordination of new construction Work.

3. Prior to Work of this section, verify information and survey submitted by the General Construction Work Contractor, carefully inspect the existing conditions and verify that materials and surfaces to be altered or removed are the same as noted on the Drawings.

C. Discrepancies:

1. In the event of discrepancy of existing conditions, surfaces, etc., immediately notify the Architect.

2. Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved.

3.2 PREPARATION

A. Temporary Support: Provide temporary support of Work to be cut.

B. Protection: Protect existing construction during cutting and patching to prevent damage.

C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

D. Existing Services: Where existing services are required to be removed, relocated, or abandoned, bypass such services before cutting to avoid interruption of services to occupied areas.

3.3 PERFORMANCE

A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.

1. The Contractor shall provide cutting, patching, relocations, and or re-installations of existing construction to provide for installation of other components or performance of other construction associated with their work, and subsequently patch and finish as required to restore surfaces to their original condition. Work shall be performed whether or not shown on the Drawings.

2. The General Construction Work Contractor shall provide all required and necessary pockets in concrete and masonry walls assemblies including all

required cutting, and preparation work to allow for installation of new Work. The General Construction Work Contractor shall subsequently patch, as required, to restore and prepare surfaces to receive new finishes.

3. All repairing, patching, piecing out, filling in, restoring and refinishing shall be neatly done by craftsmen skilled in their respective trades and completed in proper manner to leave same in condition satisfactory to the Architect.

4. All new Work shall be installed plumb, level, true, and shall be shimmed, as required, to cover any irregularities in substrates.

B. Cutting:

1. Before cutting is started in any location the Contractor shall carefully investigate conditions as to human and structural safety, existing piping, wiring and items concealed, and wherever same interfere with the Work they shall be properly relocated, rerouted or removed as the case may be, at no increase to Contract price.

2. Cut existing construction by sawing, drilling, breaking, chipping, grinding, and similar operations, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.

3. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.

4. Existing Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.

5. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.

6. Do not disturb any structural Work, plumbing, steam, gas, or electric work without approval of Architect / Engineer.

7. Mechanical and Electrical Services:
   a. Cut off pipe or conduit in walls or partitions to be removed shall be performed by respective trade.
   b. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting shall be performed by respective trade.

8. Proceed with patching after construction operations requiring cutting are complete.

a. Remove, cut, alter, replace, patch and repair existing work as necessary to install new Work.

9. Existing Work disturbed or removed as a result of performing required new Work, shall be patched, repaired, reinstalled or replaced with new Work, and refinished and left in as good condition as existing before commencing Work.

C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections of these Specifications.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.

2. Field Mock-up: Prepare field mock-up of proposed restoration method as requested or required by the Architect. Obtain Architect's approval prior proceeding with actual work.

3. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate or minimize evidence of patching and refinishing.

4. Floors and Walls: Where walls, partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the existing and new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
   a. Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.

5. Ceilings: Cut, remove, patch, repair, install new including hanging assemblies and finish ceilings as necessary to provide an even-plane surface of uniform appearance.

3.4 CLEAN-UP

A. Areas where demolition is in progress within or adjacent to Owner occupied areas shall be broom cleaned at the end of each working day.

B. Do not burn materials or debris on premises.

C. Do not allow demolished materials to accumulate inside or outside of existing building.

D. Remove from the site all rubbish and debris resulting from work of this section at the end of every work day.

E. If the Contractor fails to clean-up their debris within 24 hours, the Owner has the right to clean-up the debris left by the Contractor. All associated clean-up costs, incurred by the Owner, will be back-charged to the Contractor.

3.5 PROTECTION

A. Contractor shall provide all other necessary temporary enclosures, guardrails, barricades, etc. to adequately protect all workers and public from possible injury. Provide all necessary temporary partitions, enclosures, coverings of approved materials and construction for confining dust and debris.

B. Contractor shall be responsible for the protection of the existing building, facilities and improvements within the areas where Work is being done. Any disturbance or damage to the Work, the existing building, and improvements, equipment or any impairments of facilities resulting from their work, shall be promptly restored, repaired, or replaced by the responsible Contractor at no extra cost to the Owner.

C. Adequate protection of persons and property shall be provided at all times, including Saturdays, Sundays and holidays, and during time work is being performed and after working hours. Protection shall include barricade fencing, traffic control, dust partitions, and other means, as required.

D. Preserve and protect all existing vegetation such as trees, shrubs, and grass on or adjacent to the site and along access to the site. Be responsible for damaging of trees and shrubs, including damage due to careless operation of equipment, stock-piling of materials or tracking of grass areas by equipment.

3.6 SALVAGE

A. Partial Removal: Items of salvable value to Contractor may be removed from structure as work progresses. Salvage items must be transported from site as they are removed.

1. Storage or sale of removed items on-site will not be permitted.

B. Items designated on Drawings or in Specifications to remain the property of the Owner, or to be reused, shall be removed, and securely stored with care to prevent damage. Repair or replace such items damaged in removal.

C. Before transporting non-designated, removed items from the site, contact Architect and Owner's Representative for decision as to what items if any are to remain the property of the Owner. Items retained by the Owner will be transported by them to their storage area.

3.7 STANDARDS

A. All demolition Work shall be performed in accordance with the applicable rules and regulations and the Codes and Ordinances of local, State and Federal authorities, and in accordance with the requirements of public utility corporations.

B. Work shall satisfy requirements of the Occupational Safety and Health Act of 1970 with amendments.

C. Work not affected by more stringent requirements of regulatory agencies shall satisfy the provisions of ANSI-A10.6-2006 (R2016) - American National Standard Safety Requirements for Demolition.

D. Confine the movement and storage of vehicles, equipment and materials to such routes and locations as may be designated by the Owner and Architect.

E. The building and grounds will be maintained in a clean and orderly manner so as to conform with all local fire safety regulations and in accordance with the latest editions of the Safety Code of the National and State Board of Fire Underwriters.

3.8 INGRESS, EGRESS AND CIRCULATION

A. The Prime Contractor shall be responsible for performing their construction activities in such manner to maintain ingress and egress for visitors and occupants of Owner-occupied areas and to continuously maintain all required emergency exits from and circulation between existing facilities. Passageways for emergency exits shall be kept continuously free from debris, construction equipment, tools, stockpiles or materials, and other hazards to speedy evacuation. The Contractor shall provide all necessary temporary work as prudence and good practice may dictate and in accordance with Applicable Law and Authorities having jurisdiction to obtain and maintain all such ingress, egress and circulation requirements. The Prime Contractor shall be responsible for providing coordination of this temporary work between Subcontractor(s), as directed by the Architect. All temporary work shall be removed when no longer required.

3.9 NON-INTERFERENCE WITH OWNER'S OPERATIONS

A. Work under this Contract will be performed after Owners normal working hours. Coordinate with Owner’s schedule and operation, obtain Owner’s approval prior to proceeding with Work.

B. Contractor shall acquaint themself with the general character of the Owner's operations prior to commencing Work and shall schedule their work to avoid interference therewith. The sequence of alteration operations shall be in accordance with a schedule of Contract operations approved by the Owner and Architect.

C. The Contractor shall not start work until the schedule has been approved in writing by the Architect and the Owner.

D. The Contractor shall expedite placing orders and submission of shop drawings for equipment required to complete work under this Contract to ensure delivery of all equipment with adequate time allowed to complete the installations to conform to the project completion date.

END OF SECTION 01050

SECTION 01151 - UNIT PRICES

PART 1 GENERAL

1.1 PROCEDURE

A. Bidder shall insert on the Proposal Form, all Unit Prices applicable to the work under their bid. Unit Prices will be used as the basis for computing "additions to" or "deductions from" the Contract Price for extra work and for work countermanded, reduced or omitted.

B. Except as otherwise provided in the General Conditions, the Unit Prices when accepted, adjusted or established by the Contract shall remain binding and irrevocable for the entire period of the Contract, regardless of the quantities of work ordered or required under such Unit Prices.

C. The acceptance of the Unit Price is on condition that the general character of the material and workmanship required for any work related thereto shall be equivalent to corresponding work as shown and specified, and that all costs, overhead and profit, as well as all incidental work required in connection therewith, has been included in the Unit Price.

1.2 UNIT PRICES - PLUMBING CONSTRUCTION: Materials in Place.

Removal and replacement of existing damaged or deteriorated metal plumbing piping $_____ per lin. ft.

END OF SECTION 01151

SECTION 01200 - PROJECT MEETINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplemental Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements for project meetings including but not limited to:

1. Pre-Construction Conference
2. Pre-Installation Conferences
3. Coordination Meetings
4. Progress Meetings

B. Construction Schedule requirements is specified in another Division 1, Section.

1.3 PRE-CONSTRUCTION CONFERENCE

A. The Architect will schedule a pre-construction conference and organizational meeting at the Project site no later than fifteen (15) calendar days after execution of the Agreement and prior to commencement of construction activities. Conduct the meeting to review responsibilities and personnel assignments.

B. Attendees: The NJM Representative, Architect, the Prime Contractor and their superintendent, major Subcontractors, manufacturers, suppliers and other concerned parties shall each be represented at the conference by persons familiar with and authorized to conclude matters relating to the Work.

C. Agenda: Discuss items of significance that could effect progress including such topics as:

1. Long lead items
2. Tentative construction schedule
3. Critical work sequencing
4. Designation of responsible personnel
5. Procedures for processing field decisions and Change Orders
6. Procedures for processing Applications for Payment
7. Distribution of Bid Documents
8. Submittal of Shop Drawings, Product Data, and Samples
9. Preparation of record documents
10. Use of the premises
11. Office, Work, and storage areas

12. Equipment deliveries and priorities
13. NJM Contractor Handbook
14. Safety Procedures
15. First Aid
16. Security
17. Housekeeping
18. Working hours
19. On-site parking of workers
20. Construction material staging area(s)

1.4 PRE-INSTALLATION CONFERENCES

A. The Prime Contractor to conduct a pre-installation conference at the site before each construction activity that requires coordination with other construction. The installer and representative of manufacturers and fabricators involved in or affected by the installation, and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise the NJM Representative and the Architect of scheduled meeting dates.

1. Review the progress of other construction activities and preparations for the particular activity under consideration at each pre-installation conference, including requirements for:
    a. Bid Documents
    b. Options
    c. Related change orders
    d. Purchases
    e. Deliveries
    f. Shop Drawings, product data and quality control samples
    g. Possible conflicts
    h. Compatibility problems
    i. Time schedules
    j. Weather limitations
    k. Manufacturer's recommendations
    l. Compatibility of materials
    m. Acceptability of substrates
    n. Temporary facilities
    o. Space and access limitations
    p. Governing regulations
    q. Safety
    r. Inspection and testing requirements
    s. Required performance results
    t. Recording requirements
    u. Protection

2. Record significant discussions and agreements and disagreements of each conference along with the approved schedule. Distribute the record of the meeting to everyone concerned, promptly, including the NJM Representative, and the Architect.

3. Do not proceed if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of Work and reconvene the conference at the earliest feasible date.

1.5 COORDINATION MEETINGS

A. The Contractor for General Construction will conduct project coordination meetings at regularly scheduled times convenient for all parties involved. Project coordination meetings are in addition to specific meetings held for other purposes, such as regular progress meetings and special pre-installation meetings.

B. Request representation at each meeting by every party currently involved in coordination or planning for the construction activities involved.

C. Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

1.6 PROGRESS MEETINGS

A. Regular Progress Meetings: The Architect will schedule and conduct regular progress meetings as follows:

1. Bi-weekly meeting with the NJM Representative, Architect, Contractor and Subcontractors.
    a. Weekly meetings between the Contractor and Subcontractors will be the responsibility of the Contractor and the Architect will not attend.

B. Special Meetings will be conducted as required by the progress of the work

C. Location of the Meetings: Meetings shall be conducted at a location in the building to be determined by the NJM Representative.

D. Attendance: Attendance at Construction Meetings shall be as follows:

1. The NJM Representative shall be in attendance at bi-weekly meetings and at any special meetings, as appropriate to the agenda.

2. The NJM Representative and the Architect at bi-weekly meetings and at any special meetings, as appropriate to the agenda.

3. Engineer, as appropriate to the agenda.

4. The Contractor at all construction meetings.

5. Subcontractors, as appropriate to the agenda.

6. Suppliers, as appropriate to the agenda.

7. The NJM Representative at all construction meetings.

E. Agenda: Review and correct or approve minutes of the previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion, as appropriate to the current status of the project.

F. Contractor's Construction Schedule:

1. Review the present and future needs of each entity present, including such items as:
   a. Interface requirements
   b. Time
   c. Sequences
   d. Deliveries
   e. Off-site fabrication problems
   f. Access
   g. Site utilization
   h. Temporary facilities and services
   i. Hours of work
   j. Hazards and risks
   k. Housekeeping
   l. Quality and work standards
   m. Change orders
   n. Documentation of information for payment requests

G. Reporting: No later than three (3) business days after each progress meeting date, distribute copies of minutes of the meeting to each party present and to other parties who should have been present. Include a brief summary, in narrative form, of progress since the previous meeting and report.

H. Schedule Updating: Revise the construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue the revised schedule concurrently with the report of each meeting.

END OF SECTION 01200

SECTION 01400 - MATERIAL TESTING / QUALITY CONTROL SERVICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for material testing and quality control services.

1. Testing and inspecting services are required to verify compliance with requirements specified or indicated and are the responsibility of the Contractor. These services do not relieve Contractor of responsibility for compliance with the Bid Document requirements.

B. Specific quality-control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.

1. Quality Control Services is the responsibility of the Contractor.

2. Specified tests, inspections, and related actions do not limit Contractor's quality-control procedures that facilitate compliance with the Bid Document requirements. Manufacturer's Inspections referenced in the project manual.

3. Requirements for Contractor to provide quality-control services required by Architect, the NJM Representative or Authorities Having Jurisdiction are not limited by provisions of this Section. Quality control services and assurances include, but are not limited to the Codes and Standards set by ASTM, ASME, Underwriter Laboratories (UL), Factory Mutual, International Building Code, OSHA, AWPA, ANSI, Aluminum Association (AA), American Architectural Manufacturers Association (AAMA).
   a. Section 03450 - Self-Drying Finishing Underlayment,
   b. Section 04200 - Unit Masonry,
   c. Section 05500 - Metal Fabrications,
   d. Section 06100 - Carpentry,
   e. Section 06400 - Architectural Woodwork,
   f. Section 07251 - Repair of Sprayed-on Fireproofing,
   g. Section 07900 - Joint Sealer Assemblies,
   h. Section 08815 - Mirror Glass,
   i. Section 09300 - Tile,
   j. Section 09510 - Suspended Acoustical Tile Ceiling,

k. Section 09900 - Paint,
l. Section 10161 - Solid Plastic Toilet Partitions,
m. Section 10800 - Toilet Accessories.

C. Related Sections include the following:

1. Division 1 Section "Construction Progress Documentation" for developing a schedule of required tests and inspections in NJM General Conditions and Section 01200.

2. Division 1 Section "Cutting and Patching" for repair and restoration of construction disturbed by testing and inspecting activities.

3. Division 2 through 16 Sections for specific test and inspection requirements.

1.3 DEFINITIONS

A. Quality Control Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and ensure that proposed construction complies with requirements.

B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that completed construction complies with requirements. Services do not include contract enforcement activities performed by Architect

C. Mockups: Full-size, physical example assemblies to illustrate finishes and materials. Mockups are used to verify selections made under Sample submittals, to demonstrate aesthetic effects and, where indicated, qualities of materials and execution, and to review construction, coordination, testing, or operation; they are not Samples.

1. Mockups establish the standard by which the Work will be judged.

D. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

1.4 DELEGATED DESIGN

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Bid Documents, provide products and systems complying with specific performance and design criteria indicated.

1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.

1.5 REGULATORY REQUIREMENTS

A. Copies of Regulations: Obtain copies of referenced regulations which also available in Local Public Libraries.

1.6 SUBMITTALS

A. Qualification Data: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

B. Delegated-Design Submittal: When requirement is indicated in specific technical section and/or when requested by the Architect, in addition to Shop Drawings, Product Data, and other required submittals, submit a statement, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional, indicating that the products and systems are in compliance with performance and design criteria indicated. Include list of codes, loads, and other factors used in performing these services.

C. Schedule of Tests and Inspections: Prepare in tabular form and include the following:

1. Specification Section number and title.
2. Description of test and inspection.
3. Identification of applicable standards.
4. Identification of test and inspection methods.
5. Number of tests and inspections required.
6. Time schedule or time span for tests and inspections.
7. Entity responsible for preforming tests and inspections.
8. Requirements for obtaining samples.
9. Unique characteristics of each quality-control service.

D. Reports: Prepare and submit certified written reports that include the following:

1. Date of issue.
2. Project title and number.
3. Name, address, and telephone number of testing agency.
4. Dates and locations of samples and tests or inspections.
5. Names of individuals making tests and inspections.
6. Description of the Work and test and inspection method.
7. Identification of product and Specification Section.
8. Complete test or inspection data.
9. Test and inspection results and an interpretation of test results.
10. Ambient conditions at time of sample taking and testing and inspecting.
11. Comments or professional opinion on whether tested or inspected Work complies with the Bid Document requirements.

12. Name and signature of laboratory inspector.
13. Recommendations on retesting and reinspecting.

E. Permits and Inspections: NJM will obtain all permits and inspections for the project.

1.7 QUALITY ASSURANCE

A. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

B. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

C. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

D. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance.

E. Professional Engineer Qualifications: A Professional Engineer who is legally qualified to practice in the jurisdiction where the Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar to those indicated for this Project in material, design, and extent.

F. Specialists: Certain sections of the Specifications require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.

1. Requirement for specialists shall not supersede building codes and similar regulations governing the Work, nor interfere with local trade-union jurisdictional settlements and similar conventions.

G. Testing Agency Qualifications: An agency with the experience and capability to conduct testing and inspecting indicated, as documented by ASTM E 548, and that specializes in types of tests and inspections to be performed.

1. Preconstruction Testing: Testing agency shall perform preconstruction testing for compliance with specified requirements for performance and test methods.

2. Contractor responsibilities include the following:

a. Provide test specimens and assemblies representative of proposed materials and construction. Provide sizes and configurations of assemblies to adequately demonstrate capability of product to comply with performance requirements.
b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
c. Fabricate and install test assemblies using installers who will perform the same tasks for Project.
d. When testing is complete, remove assemblies; do not reuse materials on Project.

3. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Architect and the NJM Representative with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Bid Documents.

H. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:

1. Build mockups in location and of size indicated or, if not indicated, as directed by NJM Representative and Architect.

2. Notify the NJM Representative and Architect seven (7) days in advance of dates and times when mockups will be constructed.

3. Demonstrate the proposed range of aesthetic effects and workmanship.

4. Obtain Architect's and NJM Representative's approval of mockups before starting work, fabrication, or construction.

5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.

6. Demolish and remove mockups when directed, unless otherwise indicated.

1.8 QUALITY CONTROL

A. Contractor Responsibilities: Unless otherwise indicated, provide quality-control services specified and required by Authorities Having Jurisdiction.

1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.

2. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.

3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.

4. Testing and inspecting requested by Contractor and not required by the Bid Documents are Contractor's responsibility.
   a. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

B. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing.

C. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that revised or replaced Work that failed to comply with requirements established by the Bid Documents.

1. Testing Agency Responsibilities: Cooperate with NJM Representative, Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
   a. Notify NJM Representative, Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
   b. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
   c. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
   d. Do not release, revoke, alter, or increase requirements of the Bid Documents or approve or accept any portion of the Work.
   e. Do not perform any duties of Contractor.

2. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
   a. Access to the Work.
   b. Incidental labor and facilities necessary to facilitate tests and inspections.
   c. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
   d. Facilities for storage and field-curing of test samples.
   e. Delivery of samples to testing agencies.
   f. Preliminary design mix proposed for use for material mixes that require control by testing agency.
   g. Security and protection for samples and for testing and inspecting equipment at Project site.

3. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and quality-control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
    a. Schedule times for tests, inspections, obtaining samples, and similar activities.

4. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Bid Documents. Submit schedule within 30 days of date established for commencement of the Work.
    a. Distribution: Distribute schedule to NJM Representative, Architect, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 REPAIR AND PROTECTION

A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.

1. Provide materials and comply with installation requirements specified in other Sections of these Specifications. Restore patched areas and extend restoration into adjoining areas in a manner that eliminates evidence of patching.

2. Comply with the Bid Documents requirement for Division 1 Section "Cutting and Patching."

3. Protect construction exposed by or for quality-control service activities.

4. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 01400

SECTION 01410 - REFERENCES AND INDUSTRY STANDARDS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The Work of this Section applies to all Bid Documents including Drawings, Division 1 - Miscellaneous Requirements Sections and Specifications Sections included in Part-2 through Part-6.

1.2 DEFINITIONS

A. General: Basic Contract definitions are included in the Conditions of the Contract.

B. "Approved:" The term "approved," when used to convey Architect's action on Contractor's submittals, applications, and requests, is limited to Architect's duties and responsibilities.

C. "Directed:" Terms such as "directed," "requested," "authorized," "selected," "approved," "required," and "permitted" mean directed by Architect, requested by Architect, and similar phrases.

D. "Indicated:" The term "indicated" refers to graphic representations, notes, or schedules on Drawings or to other paragraphs or schedules in Specifications and similar requirements in the Bid Documents. Terms such as "shown," "noted," "scheduled," and "specified" are used to help the user locate the reference.

E. "Regulations:" The term "regulations" includes laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, as well as rules, conventions, and agreements within the construction industry that control performance of the Work.

F. "Furnish:" The term "furnish" means to supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.

G. "Install:" The term "install" describes operations at Project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.

H. "Provide:" The term "provide" means to furnish and install, complete and ready for the intended use.

I. "Installer:" An installer is the Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.

J. The term "experienced," when used with an entity, means having successfully completed a minimum of five previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction, subject to verification by and approval of the Architect.

1. Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespeople of the corresponding generic name.

K. "Project site(s)" is the space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

1.3 INDUSTRY STANDARDS

A. Applicability of Standards: Unless the Bid Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Bid Documents to the extent referenced. Such standards are made a part of the Bid Documents by reference.

B. Publication Dates: Comply with standards in effect as of date of the Bid Documents, unless otherwise indicated.

C. Conflicting Requirements: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Architect for a decision before proceeding.

1. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

D. Copies of Standards: Each entity engaged in construction on Project must be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Bid Documents.

1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source and make them available on request.

E. Abbreviations and Acronyms for Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Bid Documents, they shall mean the recognized name of the entities indicated in Gale Research's "Encyclopedia of Associations" or in Columbia Books' "National Trade & Professional Associations of the U.S.".

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01410

SECTION 01505 - TEMPORARY FACILITIES

1.1 RESPONSIBILITIES OF CONTRACTOR

A. Contractor is responsible for the following temporary facilities and services:

1. Installation, operation, maintenance and removal of each temporary facility usually considered as its own normal construction activity.

2. Plug in electric cords, extensions cords, supplementary plug in task lighting and special lighting necessary exclusively for their own activities.

3. Their own storage and fabrication sheds.

4. All hoisting requirements for their work.

5. Collection and disposal of debris, hazardous, unsanitary or other harmful waste material from their operations, on a daily basis to trash receptacles, hoppers, containers, dumpsters, etc. furnished by the Contractor.
   a. **Refer to Section 01050 - Alterations, Cutting, Patching and Refinishing Work which identifies the responsible Contractor for the collection and disposal of debris and Section 01524 - Construction Waste Management for additional information.**

6. The secure lockup of their own tools, materials and equipment.

7. Construction aids and miscellaneous services and facilities necessary exclusively for their own construction activities.

8. Temporary storage provisions for work, including offsite provisions, if required.

9. Containerized bottled drinking water units for their personnel.

10. Fire protection provisions related to work including fire extinguishers.

11. All personnel safety equipment and provisions for their personnel.

12. Environmental protections.

13. Dust and fume control

14. Tree and plant protection.

15. Other temporary facilities and services stated as their responsibility elsewhere in the Bid Documents.

1.2 COMPRESSED AIR

A. Contractor shall furnish their own equipment and energy source to provide compressed air required for the completion of work under their Contract.

1.3 REMOVAL AND RESTORATION OF TEMPORARY FACILITIES

A. At the completion of the work prior to final payment, Contractor shall remove temporary facilities and work which they have been responsible. Refer to Section 01700 for additional requirements.

END OF SECTION 01505

SECTION 01524 - CONSTRUCTION WASTE MANAGEMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for the following:

1. Disposing of nonhazardous demolition and construction waste.

B. Related Sections include the following:

1. All of Division 1 and attached Specifications and Drawings that make a part of this Contract.

1.3 DEFINITIONS

A. Construction Waste: Building improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.

B. Demolition Waste: Building improvement materials resulting from demolition or selective demolition operations.

C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to Authorities Having Jurisdiction.

1.4 QUALITY ASSURANCE

A. Regulatory Requirements: Comply with hauling and disposal regulations of Authorities Having Jurisdiction.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 DISPOSAL OF WASTE

A. General: Remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to Authorities Having Jurisdiction.

1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.

2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. Burning: Do not burn waste materials on-site.

C. Burying: Do not bury waste materials on-site.

D. Disposal: Transport waste materials off NJM's property and legally dispose of them. Dumpsters shall be removed from the NJM property when dumpsters are filled.

E. Washing waste materials into sewers or drains is not permitted.

END OF SECTION 01524

SECTION 01600 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The Work of this Section applies to all Bid Documents including Drawings, Division 1 - Miscellaneous Requirements Sections and Specifications sections included in Part-2 through Part-6.

1.2 SUMMARY

A. Section Includes:

1. General product requirements, including:
   a. General specification requirements for all products.
   b. General requirements and procedures for maintenance materials and tools.

2. General requirements for product documentation, including:
   a. Requirements and procedures for schedule of products.
   b. General requirements for operation and maintenance data.

3. General procedures for products including:
   a. Procedures for transportation and handling.
   b. Procedures for delivery and receiving.
   c. Procedures for storage.

PART 2 - PRODUCTS

2.1 GENERAL

A. Components required to be supplied in quantity within a Specification section shall be identical, interchangeable, and made by the same manufacturer.

B. Do not use products removed from existing construction unless specified for reuse by the Bid Documents.

2.2 MAINTENANCE MATERIALS AND TOOLS

A. Maintenance Materials: Parts and materials for repair and maintenance; specific items required are specified in product sections.

1. Provide products and tools which are identical to those used in the work; if necessary to obtain identical items, order at the same time as products to be installed or tools to be used in the work.

B. Package appropriately and label to show type and quantity of contents.

C. Deliver, handle, and store in the same manner as products to be installed.

D. Do not turn over to the NJM Representative until date of substantial completion, unless otherwise approved by NJM.

E. Deliver to the NJM Representative; unload. NJM will not unload.

F. Obtain receipt prior to final payment.

PART 3 - EXECUTION

3.1 PRODUCTS

A. It is the Contractor's responsibility to select products which comply with the Bid Documents and which are compatible with one another, with existing work, and with products selected by Subcontractors.

1. Where visual matching to an established physical sample is required, the Architect's decision will be final.

B. Do not use any substitute products which have not been approved in accordance with the requirements of the Bid Documents.

1. No substitutions will be accepted on this project.

C. Unless specified or noted otherwise in the Bid Documents and/or approved submittals, all Work is to be performed in accordance with the respective material Manufacturer's printed installation instruction. Work installed in variance with the Bid Documents, Approved Submittals and Manufacturer's printed installation instructions will be rejected, removed and replaced by the Contractor and at no additional cost to NJM.

3.2 SCHEDULE OF PRODUCTS

A. Prepare a complete schedule of products used, including the following for each product:

1. Manufacturer's name.

2. Brand or trade name.

3. Model number, if applicable.

4. Reference standard, if more than one is applicable.

5. Arrange products in the schedule by Specification sections; indicate paragraph where specified.

B. Prepare and submit a preliminary schedule within 15 working days after award of Contract; resubmit when revised; submit final schedule prior to final payment. See additional requirements and milestone dates in Section 01800.

C. Schedule of products shall not be used to obtain approval of substitute products; make separate request for substitution prior to the bid opening.

3.3 OPERATION AND MAINTENANCE DATA

A. Provide operation and maintenance data as specified in individual product sections.

1. Provide data sufficient for operation and maintenance by NJM without further assistance from the manufacturer.

2. Provide completed data in time for use during NJM instruction.

B. Data Required For Products - General:

1. Name of manufacturer and product.

2. Name, address, and telephone number of Subcontractor or supplier.

3. Local source of replacements.

4. Local source of replaceable parts and supplies.

C. Product Data: Where product data is specified for inclusion in operation and maintenance data, provide manufacturer's data sheets marked to indicate specific product and product options actually installed; delete inapplicable data.

D. Project Record Documents: Provide an additional copy of applicable record documents for inclusion with the operation and maintenance data.

E. Coordination Drawings: When coordination Drawings are prepared, include a copy with the operating and maintenance data.

F. Custom Manufactured Products: Provide all information needed for reordering.

G. Finish Materials: Manufacturer's product data, color/texture designations, and manufacturer's instructions for care, cleaning, and maintenance.

H. Equipment: Provide at least the following information:

1. Product data giving equipment and function description, with normal operating characteristics and limiting conditions.

2. Starting, operating, and troubleshooting procedures.

3. Cleaning and maintenance requirements and procedures.

4. External finish maintenance requirements.

5. List of maintenance materials required.

6. List of special tools required.

7. Parts list: List all replaceable parts, with ordering data.

8. Recommended quantity of spare parts to be maintained in storage.

I. Systems: Provide overall function description, with diagrams, prepared especially for this project.

J. Form of Data: Prepare data in the form of an instructional manual.

1. Arrange contents logically, using section numbers and sequence of sections indicated on the table of contents of this project manual.

2. When multiple volumes are used, arrange by related subjects; identify contents in cover title.

3. Assemble into 3-ring binders with maximum 2-inch ring size.
   a. Hardback, cleanable plastic covers.
   b. Identify each book with title "Operation and Maintenance Instructions" and project name.
   c. Page size 8-1/2 by 11 inches, maximum.
   d. Prepare special typewritten data on minimum 20-pound paper.
   e. Provide tabbed divider for each product and system.
   f. Drawings: Bind in with other data; provide reinforced binding edge; fold larger drawings to size of pages.
      1) Do not use pockets or loose drawings.

4. Provide table of contents for each volume listing:
   a. Name of the project.
   b. Name, address, telephone number, and contact name of:
      1) Architect.
      2) Contractor.
   c. Index of products and systems included in volume.

3.4 TRANSPORTATION AND HANDLING

A. Require supplier to package finished products in a manner which will protect from damage during shipping, handling, and storage.

B. Transport products by methods which avoid damage.

C. Deliver in dry, undamaged condition in manufacturer's unopened packaging.

D. Provide equipment and personnel adequate to handle products by methods which prevent damage.

E. Provide additional protection during handling where necessary to prevent damage to products and packaging.

F. Lift large and heavy components at designated lift points only.

3.5 DELIVERY AND RECEIVING

A. Arrange deliveries of products to allow time for inspection prior to installation.

B. Coordinate delivery to avoid conflict with the work and to take into account both the conditions at the site and the availability of personnel, handling equipment, and storage space.

C. Clearly mark partial deliveries to identify contents, to permit easy accumulation of entire delivery, and to facilitate assembly.

D. Promptly inspect shipments and remedy damage, incorrect quantity, incompleteness, improper or illegible labeling, and noncompliance with requirements of contract documents and approved submittals.

3.6 STORAGE

A. Indoor storage areas on-site to be coordinated with NJM.

B. General Storage Procedures:

1. Store products immediately on delivery.

2. Store products in accordance with manufacturer's instructions, with seals and labels intact and legible.

3. Store in a manner to prevent damage to the stored products and to the work.

4. Store moisture-sensitive products in weathertight enclosures.

5. Store indoors if necessary to keep temperature and humidity within ranges required by manufacturer.

6. Store unpacked and loose products on shelves, in bins, or in neat groups of like items.

7. Arrange storage to provide access for inspection and inventory.

8. Periodically inspect and remedy damage and noncompliance with required conditions.

C. Exterior Storage:

1. Cover products subject to weather damage with impervious sheet covering; provide ventilation to avoid condensation.

2. Provide surface drainage to prevent runoff or ponded water from damaging stored products.

3. Prevent damage and contamination from refuse and chemically injurious materials and liquids.

4. Store fabricated products on substantial platforms, blocking, or skids above the ground, sloped to drain.

END OF SECTION 01600

SECTION 01700 - PROJECT CLOSEOUT DOCUMENTS AND PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The Work of this Section applies to all Construction Contract Documents including Drawings, Specifications, Division 1 - Miscellaneous Requirements Sections, and Specification Sections included in Part-2 through Part-6.

1.2 SUMMARY

A. Section Includes:

1. Maintenance of Project Record Documents,
2. Record Drawings, including As-Built Drawings,
3. Record project manual (Specifications),
4. Operation and Maintenance Manuals,
5. Warranties,
6. Extra Materials,
7. Submittals required prior to requesting for determining dates of substantial and final completion, and also prior to release of final payment(s),
8. Transmittal of Closeout Project Documents to the Owner,
9. Instructions of Owner's personnel,
10. Final Cleaning.

B. GENERAL REQUIREMENTS

1. All submittals shall indicate reference to the appropriate Architect's and Owner's Project Numbers.

C. As-Built Drawings:

1. Full-size paper set.
2. Two (2) CD-Roms.

1.3 MAINTENANCE OF PROJECT RECORD DOCUMENTS

A. Do not use record documents of any type for construction purposes.

B. Maintain record documents in a secure location at the site while providing for access by the Contractor and the Architect during normal working hours; store in a fire-resistive room or container outside of normal working hours.

C. Record information as soon as possible after it is obtained.

D. Assign a person or persons responsible for maintaining record documents.

E. Record the following types of information on all applicable record documents:

1. Dimensional changes.

2. New and revised details.

3. Actual routing of piping and conduit.

4. Revisions to electrical circuits.

5. Actual equipment locations.

6. Sizes and routing of ducts.

7. Locations of utilities concealed in construction.

8. Particulars on concealed products which will not be easy to identify later.

9. Changes made by modifications to the Contract; note identification numbers if applicable.

10. New information which may be useful to the Owner, but which was not shown in either the Bid Documents or submittals.

1.4 RECORD AND AS-BUILT DRAWINGS

A. During the progress of the installation, the Contractor shall keep a careful record of all changes and variations in the arrangement of their Work from the layout shown on the Drawings in order that the Owner may be provided with a complete set of all plans (As-Builts) showing the Work as actually installed.

1. The Contractor shall maintain complete two (2) sets of opaque prints of the Drawings, marked to show changes which occur due to their Work.

2. Where the actual Work differs from that shown on the Drawings, mark this set to show the actual Work.

3. Mark location of concealed items before they are covered by other Work.

4. Mark either record Drawings or shop drawings, whichever are best suited to show the change.

5. Where changes are marked on record shop drawings, mark cross-reference on the applicable Drawing.

6. When the Contractor is required by a provision of a modification to prepare a new Drawing, rather than to revise existing Drawings, obtain instructions from the Architect as to the drawing scale and information required.

7. Keep Drawings in labeled, bound sets.
   a. Mark with red pencil.

8. Incorporate new Drawings into existing sets, as they are issued.

9. Where record Drawings are also required as part of operation and maintenance data submittals, make copies from the original record Drawing set.

10. As-Built Drawing Format to be submitted to the Architect:
    a. One (1) complete, legible full-size paper (hard copy) As-Built drawing set with the following information on each page:
       1) Note: "As-Built" drawing,
       2) Contractor's Firm name,
       3) Date.
    b. Two (2) copies, pdf format CD-Rom, scanned As-Built Drawings of the hard copy furnished to the Owner (indicated above) shall be furnished to the Owner and the Architect and as directed by the Architect.

11. Mechanical/ Electrical As-Built Drawings must be submitted to the Engineer with a copy of the transmittal to the Architect. Approval must be obtained before issuing Final Certificate of Payment.

B. Record Drawings shall be provided for **all Work** including but not limited to the following:

1. General Construction Work
2. Plumbing, Drainage, Fire Suppression Work
3. HVACR Work
4. Electrical Work

1.5 PROJECT SPECIFICATION MANUAL

A. The Contractor shall maintain a complete copy of the project Specification manual, marked to show changes which occur due to their Work.

B. Where the actual Work differs from that shown in the project manual, mark the record copy to show the actual Work.

1. Include a copy of each addendum and modification to the Contract.

2. In addition to the types of information required on all record documents, record the following types of information:
   a. Product options taken, when the Specification allows more than one.
   b. Product substitutions.
   c. Proprietary name and model number of actual products furnished, for each product, material, and item of equipment specified.
   d. Name of the supplier and installer, for each product for which neither a product data submittal nor a maintenance data submittal was specified.

1.6 OPERATION AND MAINTENANCE MANUALS

A. Assemble a complete set of operation and maintenance data indicating the operation and maintenance of each system, subsystem, and piece of equipment not part of a system. Include operation and maintenance data required in individual Specification Sections and as follows:

1. Operation Data:
   a. Emergency instructions and procedures.
   b. System, subsystem, and equipment descriptions, including operating standards.
   c. Operating procedures, including startup, shutdown operations.
   d. Description of controls and sequence of operations.
   e. Piping diagrams.

2. Maintenance Data:
   a. Manufacturer's information, including list of spare parts.
   b. Name, address, and telephone number of Installer or supplier.
   c. Maintenance procedures.
   d. Maintenance and service schedules for preventive and routine maintenance.
   e. Maintenance record forms.
   f. Sources of spare parts and maintenance materials.
   g. Copies of maintenance service agreements.
   h. Copies of warranties and bonds.

B. Organize operation and maintenance manuals into suitable sets of manageable size. Bind and index data in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, with pocket inside the covers to receive folded oversized sheets. Identify each binder on front and spine with the printed title "OPERATION AND MAINTENANCE MANUAL," Project name, and subject matter of contents.

C. Operation and Maintenance Manuals must be submitted to the Engineer with a copy of the transmittal to the Architect. Approval must be obtained before issuing Final Certificate of Payment.

1. Contractor shall submit electronic version of the MEP/FP O&M manuals for review by the MEP/FP Consultant. *Paper copies should not be submitted as part of the MEP/FP review process.

1.7 WARRANTIES

A. Submittal Time: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.

B. Organize warranty documents into an orderly sequence based on the Table of Contents in the Specification manual.

1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.

2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.

3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.

4. Warranty manual must be submitted to the Architect for review. Architect's approval must be obtained before issuing final payment.

C. Provide additional copies of each warranty to include in operation and maintenance manuals.

1.8 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Preparation: Submit three copies of list to the Architect. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.

1. Organize list of spaces in sequential order, as applicable.

2. Organize items applying to each space by major element, including categories for ceilings, individual walls, floors, equipment, and building systems.

3. Include the following information at the top of each page:
   a. Project name.
   b. Date.
   c. Name of Architect.
   d. Name of Contractor.
   e. Page number.

1.9 PROJECT RECORD DOCUMENTS

A. General: Do not use Project Record Documents for construction purposes. Protect Project Record Documents from deterioration and loss. Provide access to Project Record Documents for Architect's reference during normal working hours.

B. Record Drawings: Maintain and submit one set of blue - or black-line white prints of Contract Drawings and Shop Drawings.

1. Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, Subcontractor, or similar entity, to prepare the marked-up Record Prints.
    a. Give particular attention to information on concealed elements that cannot be readily identified and recorded later.
    b. Accurately record information in an understandable drawing technique.
    c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
    d. Mark Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. Where Shop Drawings are marked, show cross-reference on Contract Drawings.

2. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at the same location.

3. Mark important additional information that was either shown schematically or omitted from Contract Drawings.

4. Note Construction Change Directive numbers, Change Order numbers, and similar identification where applicable.

5. Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location. Organize into manageable sets; bind each set with durable paper cover sheets. Include identification on cover sheets.

C. Record Specifications: Submit one copy of Project's Specifications, including Addenda and Contract modifications. Mark copy to indicate the actual product installation where installation varies from that indicated in Specifications, Addenda, and Contract modifications.

    1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.

    2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.

    3. Note related Change Orders, Record Drawings and Product Data, where applicable.

D. Record Product Data: Submit one copy of each Product Data submittal. Mark one set to indicate the actual product installation where installation varies substantially from that indicated in Product Data.

    1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.

2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.

3. Note related Change Orders, Record Drawings, and Record Specifications, where applicable.

E. Miscellaneous Record Submittals: Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

1.10 DEMONSTRATION AND TRAINING

A. Instruction: Instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.

1. Provide Instructors experienced in operation and maintenance procedures.

2. Provide instruction at mutually agreed-on times.

3. Schedule training with Owner, through Architect, with at least seven calendar days advance notice.

4. Coordinate Instructors, including providing notification of dates, times, length of instruction, and course content.

B. Program Structure: Develop an instruction program that includes individual training modules for each system and equipment not part of a system, as required by individual Specification sections. For each training module, develop a learning objective and teaching outline. Include instruction for the following:

1. System design.
2. Review of documentation.
3. Operations.
4. Adjustments.
5. Troubleshooting.
6. Maintenance.
7. Repair.

1.11 FINAL CLEANING

A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

1. Refer to other Division 1 - Specification sections for additional cleaning, as required and where applicable.

B. Cleaning: Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:
   a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
   b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
   c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
   d. Remove tools, construction equipment, machinery, and surplus material from Project site.
   e. Clean exposed interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
   f. Remove debris and surface dust from limited access spaces, including plenums, shafts, and similar spaces.
   g. Clean mirrors. Polish mirrors and glass, taking care not to scratch surfaces.
   h. Remove labels that are not permanent.
   i. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
      (1) Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.
   j. Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
   k. Replace parts subject to unusual operating conditions.
   l. Plumbing Work Subcontractor shall clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
   m. Heating, Ventilating Air Conditioning Work and Refrigeration Subcontractor shall replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
      1) Clean ducts, blowers, and coils if units were operated without filters during construction.
   n. Electrical Work Subcontractor shall clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use and defective and noisy starters in fluorescent fixtures.
   o. Leave Project clean and ready for occupancy.
   p. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

1.12 TRANSMITTAL TO OWNER

A. Collect, organize, label, and package ready for reference.

1. Provide cardboard file boxes for submittals.

2. Provide cardboard drawing tubes with end caps for transparencies.

3. Bind print sets with durable paper covers.

4. Label each document (and each sheet of drawings) with "PROJECT RECORD DOCUMENTS - This document has been prepared using information furnished by _____" [insert the contractor's name], and the date of preparation.

B. Submit to the Architect for transmittal to the Owner, unless otherwise indicated.

1.13 REMOVE TEMPORARY FACILITIES

A. At the completion of the Work prior to final payment, remove all temporary facilities entirely from the site, including, but not limited to, the following:

1. Trailers, temporary enclosures, dust barriers and other temporary protection devices.

1.14 SUBMITTAL REQUIREMENTS - SUBSTANTIAL COMPLETION

A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.

1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.

2. Submit specific warranties, maintenance service agreements, final certifications, and similar documents.

3. Prepare and submit Project Record Documents, maintenance manuals, Final Completion construction photographs and digital images on CD Rom, damage or settlement surveys, and similar final record information.

4. Deliver tools, spare parts, extra materials, and similar items to location designated by NJM Representative. Label with manufacturer's name and model number where applicable.

5. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.

6. Submit changeover information related to NJM's occupancy, use and maintenance.

7. Complete final cleaning requirements, including touch-up painting.

8. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, the Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

2. Results of completed inspection will form the basis of requirements for Final Completion.

1.15 SUBMITTAL REQUIREMENTS - FINAL COMPLETION

A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:

1. Submit a final Application for Payment according to the requirements of the Bid Documents.

2. Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance and signed by the Contractor.

3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.

4. Instruct NJM's personnel in the maintenance of products, equipment, and systems. Provide statement signed by the NJM Representative stating that they have received the required training.

B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected. The cost of additional inspections required by the Architect or their consultants due to Contractor's failure to complete the punch list will be paid by the Contractor and will be deducted from the Contractor's final payment.

C. NJM is required to obtain all final releases from governmental and regulatory Agencies Having Jurisdiction over the project with the assistance from the Architect and Contractor (if required).

1.16 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Preparation: Submit three copies of list to the Architect and the NJM Representative. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.

1. Organize list of spaces in sequential order, as applicable.

2. Organize items applying to each space by major element, equipment, and building systems.

3. Include the following information at the top of each page:
   a. Project name.
   b. Date.
   c. Name of Architect.
   d. Name of Contractor.
   e. Page number.

1.17 TRANSMITTAL OF DOCUMENTS TO NJM

A. At the completion of the project, the Contractor shall submit:

1. One (1) paper set of As-Built Drawings bound with a durable paper cover,

2. One (1) full set of digital files.

B. Label each document (and each sheet of drawings) with "PROJECT RECORD DOCUMENTS - This document has been prepared using information furnished by _____" [insert the contractor's name], and the date of preparation.

C. Submit to the Architect for transmittal to the NJM Representative, unless otherwise indicated.

1.18 REMOVE TEMPORARY FACILITIES

A. At the completion of the work prior to final payment, remove all temporary facilities entirely from the NJM site, including but not limited to the following:

1. Trailers, temporary enclosures, and other temporary protection devices.

1.19 SUBMITTALS REQUIRED PRIOR TO FINAL PAYMENT

A. Contractor must satisfy all requirements of Sections 01700 and 01900 prior to submitting for Final Payment.

B. A closeout checklist will be provided to the Contractor when they are substantially complete. The Contractor is instructed to mark each submittal with the corresponding item number on the checklist. All warranties must have the Owner Name, Project Name, Architect Project Number and Warranty Periods. If all documents are not received in this format, the submittal will be rejected and the Contractor will be instructed to pick these documents up at the Architect's office for correction.

C. Submittals required prior to final payment shall be in accordance with "Checklist" include, but are not limited to, the following items:

1. Manufacturers' product warranties, Special written guarantees and warranties, maintenance warranty, etc. in accordance with Section 01900, various Specification sections and the Table of Contents of the Specification Manual.
   a. Guarantee shall be signed and sealed by Officer of the Contracting Firm and shall be notarized.

2. Project Record Drawings, (As-Built Drawings), Record Specifications, Record Product Data, and Miscellaneous Record Submittals.
   a. Note: As-Built Drawings shall be submitted to the Architect.

3. Operation and Maintenance Manuals and Instructions.
   a. Note: Operation and Maintenance Manuals shall be submitted to the Engineer / Architect.

4. Balancing Reports for Heating, Ventilating, Air Conditioning and Refrigeration systems.

5. In accordance with requirements of N.J.S.A. 52:32-44. Contractor must submit accurate list of all Subcontractors and suppliers. Contractor must provide a certification that all proofs of business registration for all Subcontractors and suppliers are maintained in their file.

END OF SECTION 01700

CLOSEOUT CHECKLIST

Owner	New Jersey Manufacturers Insurance Company (NJM)	
Title	Toilet Room Renovations at 2nd Floor Building A-North, NJM West Trenton Campus	
Project #	FVHD-5578 / NJM Project #WT.C.2024.009	**Contract:** Toilet Renovations
Contractor		
Substantial Completion Date:		**Updated:**
Refer to Specification Sections 01700 and 01900 for closeout requirements. All Warranties must have the Owner Name, Project Name, Project Number and Warranty Periods. As-built drawings, O&M manuals, reports, certifications, warranties, punch list must be submitted to Architect for review.		
Item No.	**Documents & Warranties Required For Closeout**	**Status**
1	AIA Document G704 Certificate of Substantial Completion	
2	AIA Document G706 Affidavit of Payment of Debts & Claims	
3	Record Project Manual indicating changes or company letter stating no changes.	
4	Operation Instructions & Maintenance Manuals **(2 each in 3-ring binder)**	
5	Record Drawings. Indicate As-Built drawings with company name, address and date (**1 Paper Set & 1 flash drive)**	
6	Final Payment Requisition	
7	Certificate of Approval/Acceptance	
8	Confirmation that FVHD has received "hard copies" (not electronic) of all shop drawing submittals.	
9	Letter on Contractor's letterhead stating date of substantial completion and requesting punch list review to Architect	
10	Final Punch list signed and dated indicating completion of all work	
11	Accurate list of all subcontractors and suppliers	
12	Warranties - Refer to Specification Section 01900 for required warranties for each trade	
13	All approvals and final releases from governmental and regulatory agencies have jurisdiction including, but not limited to: Local Construction Department, NJDEP, NJDCA, etc., as required.	

SECTION 01800 - TIME OF COMPLETION

PART 1 - GENERAL REQUIREMENTS

1.1 SUMMARY

A. This section describes the requirements for completion of interim milestone events and final completion of all work required by the Bid Documents.

B. Related Sections:

1. Items of Work attached to the "Certificate of Substantial Completion" and establishing "Final Completion Time" as per Section 00800.

1.2 TIME FOR COMPLETION

A. Completion of the Contract Work by the General Contractor shall be time of the essence.

1. **All work shall be performed on third shift (11:00 PM - 7:00 AM).**

2. **Contractor is required to include the cost of any premium time and third shift work which is required in their bid to complete the work within the indicated milestone dates.**

B. The General Contractor shall work to complete the Work on-time and in accordance with the proposed dates established in this Section.

1. NJM Representative and Architect will review and evaluate the Contractor's notification if the lead-time(s) for the delivery of product(s) is delayed based on the manufacturer's inability to manufacture and deliver product(s) to the project site. The Contractor shall forward any/all correspondence from the manufacturer(s) / supplier(s) of material delivery delays.

C. Substantial and final completion of the Work shall include, but is not limited to, final inspection and acceptance by the Local Building Officials.

1.3 SEQUENCE OF CONSTRUCTION

A. In order to allow the Prime Contractor and Subcontractor(s) to understand the requirements of the Project, the following general sequence of construction Work will be followed:

1. Generally, the General Construction Contractor is to schedule, sequence and coordinate the Work with Subcontractors, as required, to logically progress the Work, meeting the overall design intent, construction quality and time of completion. **The Contractor will coordinate all inspections and approvals with the Owner who will schedule the inspections and approvals with the Authorities Having Jurisdiction (AHJ's).**

2. Proper scheduling of the Work includes timely sequencing, preparation, review and approval by the General Contractor and **submission of requisite technical and other project submittals and shop drawings** to the Architect and Owner's Representative for approval to advance the proper, logical progression of the Work.

3. After mobilization and securing the work site, the General Construction Work Contractor is to perform selective demolition of existing general building construction, layout and coordinate the proposed new construction with existing construction to remain, as noted on the Construction Drawings.
   a. Obtain demolition permit to allow commencement of the selective demolition Work while permit applications for new Construction are under review by the AHJ's.

4. Progress the Work of all Trades towards completion, as required, by the Bid Documents to obtain **Substantial Completion** including, inspection by the AHJ's to obtain the Certificate of Occupancy.

5. Provide written formal notification of **Substantial Completion** to the Architect and request Punch-List Observations.

6. Complete proper preparation, review and approval by the Prime Contractor and submission of all Close-out Documents, Operation and Maintenance Manuals, As-built surveys and Drawings to the Architect / Engineer within Contract time required to achieve **Final Completion**.

1.5 PROJECT CONTRACT MILESTONE DATES

A. TIME OF COMPLETION

1. **Milestone No. 1**
   a. Sign Contract, no later than **thirty (30)** calendar from **Notice of Award.**
   b. **Notice to Proceed** shall take place with **three (3) business days** of date of signing Contract.

2. **Milestone No. 2:**
   a. Submission of all technical shop drawing submittals shall be submitted within **thirty (30) calendar days** from **Notice of Award**.

3. **Milestone No. 3:**
   a. Substantial Completion of the renovations to the Second Floor Building A Toilet Rooms (**the Work**) shall be **90 Calendar Days from Building Department approval(s) and delivery of the construction materials.**

4. **Milestone No. 4:**
   a. Final Completion of all Work including punch list items and closeout documents, no later than **30 Calendar Days from Substantial Completion.**

END OF SECTION 01800

SECTION 01900 - GUARANTEES AND WARRANTIES

PART 1 - GENERAL

1.1 CONTRACT

A. Period for all guarantees and warranties shall commence at date of substantial completion for the entire project, as determined by the Architect.

B. The Contractor's guarantee on all work, covered by Maintenance Bond. . . .**One (1) Yr.**

1. The Maintenance Bond shall represent a continuing obligation of the Prime Contractor and their Subcontractor(s) to repair/replace defective materials and/or labor of products installed in the project for **one (1) year** from the date of Substantial Completion.

C. Provide all required warranties indicated in specification sections which include but not limited to the following:

1.2 GENERAL CONSTRUCTION WORK

A. Self-Drying Finishing Underlayment as specified in Section 03450. (Trowel)

1. Special Project Warranty: Submit a written warranty signed by the manufacturer, the Contractor, and the installer, guaranteeing to correct failures in materials and workmanship which occur within the warranty period, including those attributable to abnormal aging, without reducing or otherwise limiting any other rights to correction which the Owner may have under the contract documents.
   a. The warranty shall include responsibility for removing and replacing other work as necessary to accomplish repairs or replacement of materials covered by the warranty.
      1) Warranty period: Minimum **two (2) years** after date of substantial completion.

B. Architectural Woodwork as specified in Section 06400.

1. Special Project Warranty: Provide Manufacturer's / Installer's / Contractor's warrantees against delamination, warping, hardware and support system failure and deterioration of finish.
   a. Warranty period shall be for **one (1) year** which shall start from approved date of substantial completion of work.

C. Solid Polymer Fabrications as specified in Section 06650.

1. Provide manufacturer's warranty against defects in materials, fabrication and installation, excluding damages caused by physical or chemical abuse or excessive heat. Warranty shall provide for replacement or repair of material and labor for a period of **ten (10) years**, beginning at Date of Substantial Completion.

a. For fabrications with installed warranty coverage, identify by affixing manufacturer's fabrication/installation source plate.

C. Joint Sealer Assemblies as specified in Section 07900.

1. Special Installer's Warranty: Written warranty, signed by Installer agreeing to repair or replace elastomeric joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
   a. Warranty Period: **Five (5) years** from date of Substantial Completion.

2. Special Manufacturer's Warranty: Written warranty, signed by elastomeric sealant manufacturer agreeing to furnish elastomeric joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.
   a. Warranty Period: **Five (5) years** from date of Substantial Completion.

D. Finish Hardware as specified in Section 08700.

1. Guarantee workmanship and material provided against defective manufacture. Repair or replace defective workmanship and material appearing within period of **one (1) year** after substantial completion.

2. Provide **twenty-five (25) year** factory warranty on manual surface door closers against defects in material and workmanship from date of occupancy of project.

E. Mirrored Glass as specified in Section 08815.

1. Manufacturer's Special Warranty for Mirrored Glass: Written warranty, made out to Owner and signed by mirrored glass manufacturer agreeing to replace mirrored glass units that deteriorate as defined in "Definitions" Article, f.o.b. the nearest shipping point to Project site, within specified warranty period indicated below:
   a. Warranty Period: **Ten (10) years** from date of Substantial Completion.

F. Tile as specified in Section 09300.

1. Limited Warranty:
   a. Manufacturer warrants that manufactured products will be free from defect for a period of **one (1) year** from date of purchase.
      1) Defect is defined as a shortfall in the product to perform to manufacturer’s specifications as disclosed in product literature, within industry allowable tolerances as set forth in standard, national industry protocols.
      2) Manufacturer provides detailed information in its product literature regarding appropriate tile and stone applications. Failure to comply with recommended applications voids this warranty.
      3) This one-year express warranty is the sole warranty extended and replaces any statutory warranties to the maximum extent allowable by law.

G. Acoustical Ceilings and Suspension System as specified in Section 09510.

1. Provide manufacturer's special project warranty against sagging or warping of acoustic ceiling boards for a minimum period of **thirty (30) years** which starts on approved date of substantial completion.

H. Solid Plastic Toilet and Bath Partitions as specified in Section 10161.

1. Manufacturers Standard Warranty: Provide warranty for Solid polymer HDPE Material: Against breakage, corrosion, and delamination for **twenty-five (25) years**.

I. Toilet Accessories as specified in Section 10800.

1. ASI Products are warrantied to be free of defects in material and workmanship for a period of **one (1) year** from date of invoice, unless indicated otherwise.

2. Mirrors: Warrantied to be free of defects in material and workmanship for a period of **fifteen (15) years** from date of invoice.

1.3 PLUMBING & DRAINAGE WORK

A. Contractor shall unconditionally warranty their work to be free of defects in material and workmanship for a period of **one (1) year** from the date of final acceptance by the Owner. Any defects shall be repaired or replaced as directed by the owner at ne additional cost.

1. All equipment shall carry the origianal manufacturer's warranty as specified in the manufacturer's warranty documentation provided in the equipment. Warranty period shall be calculated from the date of final acceptance by the Owner. Any defects shall be repaired or replaced at the discretion of the manufacturer.

1.4 HEATING, VENTILATING, AIR CONDITIONING AND REFRIGERATION WORK

A. The equipment shall have a full coverage warranty for a period of **two (2) years** from the date of final acceptance by the Owner. If during this period, any part should fail to function properly due to defects in workmanship or material, it shall be replaced or repaired at the discretion of the manufacturer.

1.5 ELECTRICAL WORK

A. Contractor shall guarantee in writing to the Owner that all work installed by them shall be free of defects in workmanship and materials and that all apparatus will develop the capabilities and characteristics as indicated and that if during a period of **one (1) year** from the date of final approval of work by the Architect, any defects on workmanship, materials or performance appear, they will remedy them without any cost to the Owner

END OF SECTION 01900

PART 2

GENERAL CONSTRUCTION WORK

SECTION 02070 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 DESCRIPTION OF WORK

A. Extent of selective demolition work is indicated on the drawings.

B. Type(s) of Selective Demolition Work: Demolition requires the selective removal and subsequent offsite disposal of the following:

1. Portion(s) of building structure as indicated on drawings and as required to accommodate new construction.

2. Removal and protection of existing fixtures and equipment items indicated as "salvage", and reinstallation and/or deliver to the Owner.

C. Removal Work Specified Elsewhere:

1. Mechanical and Electrical Work - Cutting non-structural concrete floors and masonry walls for underground piping, conduit, and for above grade piping, conduit, is included with the work of the respective mechanical and electrical trades.

D. Related Work Specified Elsewhere:

1. Remodeling construction work and patching is included within the respective sections of specifications, including removal of materials for re-use and incorporated into remodeling or new construction.

1.3 SUBMITTALS

A. Proposed Demolition Activities: Submit schedule indicating proposed methods and sequence of operations for selective demolition work to Owner's Representative for review prior to commencement of work. Provide starting and ending dates for each activity as appropriate.

1. Include coordination for shut-off, capping, and continuation of utility services, as required, together with details for dust and noise control protection.

2. Provide detailed sequence of demolition and removal work to ensure uninterrupted progress of Owner's on-site operations.

3. Sequence construction so as to minimize obstruction of exits and provide temporary alternate exits, as required by authorities having jurisdiction.

4. Coordinate with Owner's continuing occupation of portions of existing building, and with Owner's reduced usage during summer months.

B. Photographs: Photograph existing conditions of structure, surfaces, equipment or surrounding properties which could be misconstrued as damage resulting from selective demolition work; file with Owner's Representative prior to starting work.

C. Project Record Documents: Indicate unanticipated structural, electrical, or mechanical conditions.

1.4 JOB CONDITIONS

A. Occupancy: Owner will be continuously occupying areas of the building immediately adjacent to areas of selective demolition. Conduct selective demolition work in manner that will minimize need for disruption of Owner's normal operations. Provide minimum of 72 hours advance notice to Owner of demolition activities which will severely impact Owner's normal operations.

B. Condition of Structure: Owner assumes no responsibility for actual condition of items or structure to be demolished.

1. Conditions existing at time of commencement of contract will be maintained by Owner insofar as practicable. However, variations within structure may occur by Owner's removal and salvage operations prior to start of selective demolition work.

C. Protections: Provide temporary barricades and other forms of protection, as required, to protect Owner's personnel and general public from injury due to selective demolition work.

1. Provide protective measures , as required, to provide free and safe passage of Owner's personnel and general public to and from occupied portions of building.

2. Protect existing finish work, from being damaged during the project, which is to remain in place and becomes exposed during demolition operations.

3. Protect floors with suitable coverings so as to leave the flooring in same condition at end of job.

4. Construct temporary insulated solid dustproof partitions, to separate areas where noisy or extensive dirt or dust operations are performed. Equip partitions with dustproof doors.

5. Remove protections at completion of work.

D. Damages: Promptly repair damages caused to adjacent facilities by demolition work at no cost to Owner, including but not limited to concealed interior and exterior utility lines not properly investigated by the Contractor, prior to commencement of demolition work.

E. Traffic: Conduct selective demolition operations and debris removal in a manner to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities.

1. Do not close, block or otherwise obstruct streets, walks or other occupied or used facilities without written permission from authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.

F. Explosives: Use of explosives will not be permitted.

G. Utility Services: Maintain existing interior and exterior utilities indicated to remain, keep in service, and protect against damage during demolition operations.

1. Do not interrupt existing utilities serving occupied or used facilities.

PART 2 - PRODUCTS (Not Applicable).

PART 3 - EXECUTION

3.1 INSPECTION

A. Prior to commencement of selective demolition work, inspect areas in which work will be performed.

1. **Photograph existing conditions of structure, surfaces, equipment which could be misconstrued as damage resulting from selective demolition work; file with the NJM Representative prior to starting work.**

2. Commencement of work shall constitute acceptance of conditions. Any necessary remedial work required to correct any unsatisfactory conditions, found after the start of installation, will be provided at no cost to the Owner.

3. Prior to the commencement of work review the demolition activities with the Owner's representative to identify additional salvage items requested by the Owner.

3.2 PREPARATION

A. Cover and protect furniture, equipment and fixtures to remain from soiling or damage when demolition work is performed in rooms or areas from which such items have not been removed.

B. Erect and maintain dust-proof partitions and closures, as required, to prevent spread of dust or fumes to occupied portions of the building.

C. Locate, identify, stub off and disconnect utility services that are not indicated to remain.

1. Provide by-pass connections as necessary to maintain continuity of service to occupied areas of building. Provide minimum of 72 hours advance notice to Owner if shut-down of service is necessary during change-over.

3.3 DEMOLITION

A. Perform selective demolition work in a systematic manner. Use such methods , as required, to complete work indicated on Drawings in accordance with demolition schedule and governing regulations.

1. Demolish concrete and masonry in small sections. Cut concrete and masonry at junctures with construction to remain using power-driven masonry saw or hand tools; do not use power-driven impact tools.
   a. The Contractor shall use caution when cutting into existing masonry construction

(eg.: concrete slabs, single wythe and cavity wall construction) as there may be un-documented utilities within the cavity or built into the cores of cmu wall construction or under the floor slab. The contractor shall perform all necessary investigation prior to demolition work to determine the presence of existing utilities within construction to be demolished, including but not limited to radar, thermal, impact echo, etc. The Contractor shall pay for restoring / repairing the existing construction if utilities are cut and proper selective demolition investigation work was not performed. Refer to Section 01050.

2. Locate demolition equipment throughout structure and promptly remove debris to avoid imposing excessive loads on supporting walls, floors or framing.

3. Provide services for effective air and water pollution controls, as required, by Authorities Having Jurisdiction.

4. For interior slabs on grade, use removal methods that will not crack or structurally disturb adjacent slabs or partitions. Use power saw where possible.

B. If unanticipated mechanical, electrical or structural elements which conflict with intended function or design are encountered, investigate and measure both nature and extent of the conflict. Submit report to the NJM Representative / Architect in written, accurate detail. Pending receipt of directive from Owner's Representative / Architect rearrange selective demolition schedule as necessary to continue overall job progress without delay.

3.4 SALVAGE MATERIALS

A. Salvage Items: Where indicated on Drawings as "Salvage-Deliver to Owner", carefully remove indicated items, clean, store and turn over to Owner and obtain receipt.

1. Unless otherwise indicated all materials, items, equipment, etc. resulting from demolition work shall be removed from the site at the Contractor’s expense.

B. Historic artifacts and other articles of historic significance remain the property of the Owner. Notify Owner's Representative if such items are encountered and obtain acceptance regarding method of removal and salvage for Owner.

3.5 DISPOSAL OF DEMOLISHED MATERIALS

A. Remove debris, rubbish and other materials resulting from demolition operations from building site. Transport and legally dispose of materials off-site.

B. If hazardous materials are encountered during demolition operations, notify the NJM Representative immediately, comply with applicable regulations, laws, and ordinances concerning protection against exposure or environmental pollution.

C. Burning of removed materials is not permitted on the project site.

3.6 CLEAN-UP AND REPAIR

A. Upon completion of demolition work, remove tools, equipment and demolished materials from site. Remove protections and leave interior areas broom clean.

B. Repair demolition performed in excess of that required. Return structures and surfaces to remain to condition existing prior to commencement of selective demolition work. Repair adjacent construction or surfaces soiled or damaged by selective demolition work.

END OF SECTION 02070

SECTION 03450 - SELF-DRYING FINISHING UNDERLAYMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Extent of Self Drying Cement - Based Finishing Underlayment for flooring work as indicated on drawings.

B. Related Section:

1. Section 09300 - Tile

1.3 DEFINITIONS

A. Self-Drying Finishing Underlayment for flooring includes systems which consist of materials specially formulated, portland cement self-smoothing, rapid hardening compound to level and repair existing interior concrete slabs.

1.4 SUBMITTALS

A. Product Data: Submit manufacturer's Specifications, installation instructions, and general recommendations for each major product required. Include data substantiating that products to be furnished comply with requirements of the Bid Documents.

B. Test Reports: Submit results of testing specified.

1. Certificates: Submit manufacturer's test data certifying compliance with specified performance requirements.

2. Test reports: Submit test data for moisture content and hydrostatic pressure of existing concrete slab.

C. Certificates: Submit manufacturer's certification that products comply with requirements of the Bid Documents.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: Obtain required products from a single manufacturer.

B. Manufacturer Experience: Provide products of this section by companies which have successfully specialized in production of this type of work for a recommended 5 years.

C. Installer's Qualifications: All work of this section shall be performed by an experienced applicators, licensed by the manufacturer of the system and successfully completed this type of work for a recommended 2 years.

D. Codes and Standards: Comply with requirements of the Bid Documents or of governing codes and Authorities Having Jurisdiction.

E. Mock-up: Prior to installation of Work of this section, erect sample at location directed by or acceptable to the Architect, using specified materials and workmanship to be expected in the completed Work. Once mock-up has been approved by the Architect, retain until the work has been completed and accepted.

1. Configuration: Approximately 4 feet by 4 feet.
2. Mock-up may not be incorporated into the final Work; demolish and remove from site when directed by the Architect.

F. Pre-installation Conference: Prior to installation of Work of this section, conduct a meeting at the project site to discuss quality assurance requirements. In addition to the Contractor and the installer, arrange for attendance of the following:

1. Other installers affected by the work of this section.
2. The NJM Representative.
3. The Architect.
4. Manufacturer's Representative.
5. Supplier.

G. Allowable Tolerances:

1. Variation from Level: Do not exceed 1/4 inch in any bay or 10 feet in distance.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Keep materials dry at all times. Protect against exposure to weather and against contact with damp or wet surfaces.

B. Store materials on one site to maintain proper separation and grading integrity. Cover materials to prevent excessive accumulation of moisture.

C. Protect materials from excessive moisture in shipment, storage, and handling. Deliver materials in manufacturer's unopened packages, and store in dry place with adequate air circulation.

D. Storage: Stack products of this section carefully to provide air circulation within stacks.

1.7 PROJECT CONDITIONS

A. Environmental Requirements: Do not proceed with installation when air temperatures are below 40°F , or above 95°F, unless protective measures acceptable to the manufacturer are taken.

B. Do not proceed with installation until temperature and relative humidity have been stabilized and will be maintained within values established by the manufacturer for optimum quality control.

C. Provide adequate ventilation to prevent accumulation of hazardous fumes during application of components in enclosed spaces, and maintain ventilation until materials have thoroughly cured.

1.8 SEQUENCING AND SCHEDULING

A. Coordinate work of this section with other trades and installation of special construction and equipment.

1.9 WARRANTY

A. Special Project Warranty: Submit a written warranty signed by the manufacturer, the Contractor, and the installer, guaranteeing to correct failures in materials and workmanship which occur within the warranty period, including those attributable to abnormal aging, without reducing or otherwise limiting any other rights to correction which the Owner may have under the Bid Documents.

1. The warranty shall include responsibility for removing and replacing other work as necessary to accomplish repairs or replacement of materials covered by the warranty.
   a. Warranty period: Minimum **two (2) years** after date of substantial completion.

PART 2 - PRODUCTS

2.1 MIXES

A. Basis of Design: "Ardex Feather Finish" Self-Drying, Cement - Based Finishing Underlayment, as manufactured by ARDEX Engineered Cements; or approved equal.

B. Subject to compliance with requirements of the Bid Documents, manufacturers offering products which may be incorporated in work include the following:

1. Mapei,
2. CMP Specialty Products,
3. Or approved equal.

C. Follow the manufacturer's printed instructions, procedures and recommended equipment for mixing the components.

1. Mixing Ratio: 2½ quarts of water per 10 lbs. bag at 70°F.
   a. For smaller batches, use 2 parts powder to 1 part water by volume.

D. Compressive Strength: ASTM C 109, 4200 psi, minimum.

E. VOC: 0

PART 3 - EXECUTION

3.1 EXAMINATION

A. Inspect substrates and conditions under which the work of this section will be performed, and verify that installation properly may commence. Do not proceed with the work until unsatisfactory conditions have been resolved fully.

1. Commencement of work shall constitute acceptance of conditions. Any necessary remedial work required to correct any unsatisfactory conditions, found after the start of installation, will be provided at no cost to the Owner.

B. Testing: Perform required testing of existing concrete slab, for hydrostatic pressure and moisture content. Follow manufacturer's recommended procedures for testing slab. Do not proceed with the work until unsatisfactory conditions have been resolved fully.

3.2 PREPARATION

A. Clean substrate, removing projections, all loose material and substances detrimental to the Work; comply with recommendations of manufacturer of products to be installed for proper preparation procedures.

B. Prepare substrate in accordance with recommendations of manufacturer for optimum installed performance.

C. Mask off or otherwise protect adjacent surfaces not scheduled to receive products of this section.

D. Coordinate installation with other trades, report conditions in writing to the Owner/Architect. Do not proceed with application work until any unsatisfactory conditions have been corrected.

3.3 APPLICATION

A. General: Comply with manufacturer's instructions, except where more stringent requirements are shown or specified, and except where project conditions require extra precautions or provisions to ensure satisfactory performance of the Work.

1. Apply materials to the substrate with flat side of a steel trowel to obtain a solid mechanical bond. Apply sufficient pressure to fill all defects and to feather the product into the subfloor surface and to suit existing substrate conditions.

3.4 CLEANING

A. Upon completion, clean all surfaces which have become soiled or coated as a result of Work of this section, using proper methods which will not scratch or otherwise damage finished surfaces.

B. For cleaning, use only products and techniques acceptable to manufacturer of products being cleaned.

3.5 PROTECTION

A. General: Institute protective procedures and install protective materials as required to ensure that Work of this section will be without damage or deterioration.

END OF SECTION 03450

SECTION 04200 - UNIT MASONRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 DESCRIPTION OF WORK

A. Extent of each type of masonry work is indicated on drawings and schedule.

B. Type of masonry work required includes:

1. Concrete unit masonry.
2. Mortar and grout.
3. Reinforcement, anchorage, and accessories.

C. Related Work:

1. Section 07900 - Joint Sealer Assemblies
2. Section 09300 - Tile

1.3 QUALITY ASSURANCE

A. Single Source Responsibility for Masonry Units: Obtain exposed masonry units of uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, from one manufacturer for each different product required for each continuous surface or visually related surfaces.

B. Single Source Responsibility for Mortar Materials: Obtain mortar ingredients of uniform quality, including color for exposed masonry, from one manufacturer for each cementitious component and from one source and producer for each aggregate.

C. Source Quality Control: Materials and fabrication procedures are subject to inspection and tests in mill, shop, and filed, conducted by a qualified inspection agency. Such inspections and tests will not relieve Contractor of responsibility for providing materials and fabrication procedures in compliance with specified requirements.

D. Masonry Pre-Installation Meeting: Prior to installation of masonry work, there shall be a Masonry Pre-Installation Meeting between the General Construction Work Contractor, all masonry Subcontractors (if any), and the Architect. At this meeting, all masonry construction products and procedures shall be reviewed.

1.4 SUBMITTALS

A. Product Data: Submit manufacturer's product data for type of masonry units, accessories, and other manufactured products, including certifications that each type complies with specified requirements.

B. Shop Drawings: Submit shop drawings for the following:

1. All locations of Vertical Control Joints for interior concrete masonry unit walls including control joints shown or required.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver masonry materials to project in undamaged condition.

B. Store and handle masonry units to prevent their deterioration or damage due to moisture, temperature changes, contaminants, corrosion or other causes.

C. Limit moisture absorption of concrete masonry units during delivery and until time of installation to the maximum percentage specified for Type I units for the average annual relative humidity as reported by the U.S. Weather Bureau Station nearest project site.

D. Store cementitious materials off the ground, under cover and in dry location.

E. Store aggregates where grading and other required characteristics can be maintained.

F. Store masonry accessories including metal items to prevent deterioration by corrosion and accumulation of dirt.

1.6 REFERENCE STANDARDS

A. Comply with the current applicable provisions of all codes, regulations, industry standards and specifications referenced in this section, unless otherwise modified by the requirements of the Contract Documents, including but not limited to the following:

1.	ACI 531	Building Code Requirements for Masonry Structures.
2.	ACI 531	Commentary on Building Code Requirements for Masonry Structures.
3.	ACI 530.1	Specification for Masonry Construction.
4.	ASTM C129	Non-Load Bearing Masonry Units.
5.	ASTM C140	Testing Concrete Masonry Units.
6.	ASTM C270	Standard Specification for Mortar for Unit Masonry
7.	ASTM C780	Test Method for Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry.
8.	ASTM C1586	Standard Guide for Quality Assurance of Mortars.
9.	NCMA	TEK Bulletins.

1.7 PROJECT CONDITIONS

A. Do not apply uniform floor loading for at least 12 hours after building masonry walls.

B. Do not apply concentrated loads for at least 3 days after building masonry walls.

C. Remove immediately grout or mortar in contact with such masonry where tile finish is to be applied.

PART 2 - PRODUCTS

2.1 GENERAL

A. Manufacturer: Obtain masonry units from one manufacturer.

1. Concrete Masonry Units: Subject to compliance with requirements, manufacturers of concrete masonry units which may be incorporated in the work include, but are not limited to, the following:
   a. Anchor Concrete Products Inc.
   b. Clayton Block Co., Inc.
   c. EP Henry Corporation.
   d. Or approved equal.

2. Masonry Anchors, Joint Reinforcing, Accessories, etc.: Subject to compliance with requirements, manufacturers of masonry anchors, joint reinforcing, accessories which may be incorporated in the work include, but are not limited to, the following:
   a. Heckman Building Products, Inc.
   b. Hohmann & Barnard, Inc.
   c. Or approved equal.

2.2 CONCRETE MASONRY UNITS

A. General: Comply with referenced standards and other requirements indicated below applicable to form of concrete masonry unit required.

B. Provide special shapes where required for control joints and other special conditions.

C. Concrete Block: Provide units complying with characteristics indicated below for face size, exposed face and under each form of block included, for weight classification.

D. Size: Manufacturer's standard units with nominal face dimensions of 16" long x 8" high (15-5/8" x 7-5/8" actual) x thicknesses indicated.

E. Hollow Loadbearing Block: ASTM C90 and as follows:

   1. Weight Classification: Lightweight.

2.3 MORTAR AND GROUT MATERIALS

A. General: Do not add admixtures including air-entraining agents, accelerators, retarders, water repellent agents, anti-freeze compounds or other admixtures, unless otherwise indicated.

   1. Do not use calcium chloride in mortar or grout.

B. Limit cementitious materials in mortar to portland cement-lime.

C. Portland Cement: ASTM C150, Type. Provide natural color or white cement as required to produce required mortar color.

D. Hydrated Lime: ASTM C207, Type S.

E. Aggregate for Mortar: ASTM C144, except for joints less than 1/4 inch use aggregate graded with 100% passing the No. 16 sieve.

   1. White Mortar Aggregates: Natural white sand or ground white stone.

F. Mortar for Unit Masonry: Comply with ASTM C270, Proportion Specification, for types of mortar required, unless otherwise indicated.

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

1. Provide grout with a slump of 8 to 11 inches as measured according to ASTM C143.

H. The proper use of ASTM C270 and Test Method ASTM C780 for evaluating masonry mortars produced in the laboratory and the construction site is in accordance with ASTM C1586.

I. Aggregate for Grout: ASTM C404.

J. Water: Clean and potable.

2.4 JOINT REINFORCEMENT, TIES AND ANCHORING DEVICES

A. Materials: Comply with requirements indicated below for basic materials and with requirements indicated under each form of joint reinforcement, tie and anchor for size and other characteristics:

1. Hot-Dip Galvanized Steel Wire: ASTM A82 for uncoated wire and with ASTM A153, Class B-2 (1.5 oz. per sq. ft. of wire surface) for zinc coating applied after prefabrication into units.

B. Joint Reinforcement: Provide welded-wire units prefabricated with deformed continuous side rods and plain cross rods into straight lengths of not less than 10 feet, with prefabricated corner and tee units, and complying with requirements indicated below:

1. Width: Fabricate joint reinforcement in units with widths of approximately 2 inch less than nominal width of walls and partitions as required to provide mortar coverage of not less than 5/8 inch on joint faces exposed to exterior and ½ inch elsewhere.
   a. Wire Size for Side Rods: 9 gauge.
   b. Wire Size for Cross Rods: 9 gauge.

2. Ladder design rods spaced not more than 16 inch o.c.

3. Number of Side Rods: One side rod for each face shell of concrete masonry unit.

4. Configuration:
   a. Applications of Single Wythe Wall width: Ladder type design rods at not more than 16 inches on center.
      1) Basis of Design: Provide Hohmann & Barnard, Inc., No.# 220, Ladder-Mesh; or approved equal.

2.5 MISCELLANEOUS MASONRY ACCESSORIES

A. Non-Metallic Expansion Joint Strips: Premolded, flexible cellular neoprene rubber filler strips complying with ASTM D1056, Grade 2A1, capable of compression up to 35%, of width and thickness indicated.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Do not wet concrete masonry units.

B. Cleaning Reinforcing: Before placing, remove loose rust and other coatings from reinforcing.

C. Thickness: Build single-wythe walls to the actual thickness of the masonry units, using units of nominal thickness indicated.

D. Build chases as shown or required for the work of other trades. Provide not less than 8 inch of masonry between chase.

E. Leave openings for access panels, fixture, accessories and equipment to be installed before completion of masonry work. After installation of equipment, complete masonry work to match work immediately adjacent to the opening.

F. Cut masonry units using motor-driven saws to provide clean, sharp, unchipped edges. Cut units as required to provide continuous pattern and to fit adjoining work. Use full-size units without cutting where possible. No discoloration of units caused by cutting will be acceptable.

G. Pattern Bond:

1. Concrete masonry units: Running bond.
2. Lay concealed masonry with all units in a wythe bonded by lapping not less than 2 inches.

3.2 CONSTRUCTION TOLERANCES

A. Variation from Plumb: For vertical lines and surfaces of walls and arises do not exceed 1/4 inch in 10 feet, or 3/8 inch in a story height not to exceed 20 feet, nor ½ inch in 40 feet or more. For external corners, expansion joints, control joints and other conspicuous lines, do not exceed 1/4 inch in any story or 20 feet maximum, nor ½ inch in 40 feet or more. For vertical alignment of head joints do not exceed plus or minus 1/4 inch in 10 feet, ½ inch maximum.

B. Variation from Level: For bed joints and lines, do not exceed 1/4 inch in any bay or 20 feet maximum, nor ½ inch in 40 feet or more. For top surface of bearing walls do not exceed 1/8 inch between adjacent floor elements in 10 feet or 1/16 inch within width of a single unit.

C. Variation of Linear Building Line: For position shown in plan and related portion of walls and partitions, do not exceed ½ inch in any bay or 20 feet maximum, nor 3/4 inch in 40 feet or more.

D. Variation in Cross-Sectional Dimensions: For thickness of walls, from dimensions shown, do not exceed minus 1/4 inch nor plus ½ inch.

E. Variation in Mortar Joint Thickness: Do not exceed bed joint thickness indicated by more than plus or minus 1/8 inch, with a maximum thickness limited to ½ inch. Do not exceed head joint thickness indicated by more than plus or minus 1/8 inch.

3.3 LAYING MASONRY WALLS

A. Layout walls in advance for accurate spacing of surface bond patterns with uniform joint widths and to accurately locate openings, movement-type joints, returns and offsets. Avoid the use of less-than-half-size units at corners, jambs and wherever possible at other locations.

B. Lay-up walls to comply with specified construction tolerances, with courses accurately spaced and coordinated with other work.

C. Stopping and Resuming Work: Rack back ½-unit length in each course; do not tooth. Clean exposed surfaces of set masonry, wet units lightly (if required) and remove loose masonry units and mortar prior to laying fresh masonry.

D. Built-in Work: As the work progresses, build-in items specified under this and other sections of these Specifications. Fill in solidly with masonry around built-in items.

E. Extend all interior walls full height to underside of structure of deck, unless otherwise indicated. Include compressible insulation at top to completely close space between wall and structure above.

3.4 MORTAR BEDDING AND JOINTING

A. Lay hollow concrete masonry units with full mortar coverage on horizontal and vertical face shells. Bed webs in mortar in starting course on concrete floor slab.

B. Maintain joint widths shown, except for minor variations required to maintain bond alignment. If not shown, lay walls with 3/8 inch joints.

C. Cut joints flush for masonry walls which are to be concealed or to be covered by other materials, unless otherwise indicated.

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

E. Remove masonry units disturbed after laying; clean and reset in fresh mortar. Do not pound corners or jambs to shift adjacent stretcher units which have been set in position. If adjustments are required, remove units, clean off mortar and reset in fresh mortar.

3.5 HORIZONTAL JOINT REINFORCEMENT

A. Provide continuous horizontal joint reinforcement, as indicated. Install longitudinal side rods in mortar for their entire length with a minimum cover of 5/8 inch on exterior side of walls, ½ inch elsewhere. Lap reinforcing a minimum of 6 inches.

B. Cut or interrupt joint reinforcement at control and expansion joints, unless otherwise indicated.

C. Provide continuity at corners and wall intersections by use of prefabricated "L" and "T" sections. Cut and bend reinforcement units as directed by manufacturer for continuity at returns, offsets, column fireproofing, pipe enclosures and other special conditions.

1. Space continuous horizontal reinforcement as follows:

a. For single-wythe walls, space reinforcement at 16" o.c. vertically, unless otherwise indicated.

2. Cut reinforcement units at walls abutting firewalls. Provide control joints with fire-rated sealant.

D. Reinforce masonry openings greater than 1'-0" wide, with horizontal joint reinforcement placed in 2 horizontal joints approximately 8" apart, immediately above the lintel and immediately below the sill. Extend reinforcement a minimum of 2'-0" beyond jambs of the opening except at control joints.

3.6 ANCHORING MASONRY WORK

A. Provide anchoring devices of the type indicated. If not indicated, provide standard type for facing and back-up involved.

1. Strap anchors for masonry at existing walls.

3.7 CONTROL AND EXPANSION JOINTS

A. General: Provide vertical and horizontal expansion, control and isolation joints in masonry maximum 30 feet on center. Build-in related items as the masonry work progresses.

1. Coordinate location of all control and expansion joints in the field with Architect prior to commencement of work.

B. Build in joint fillers where shown: See Section 07900, Joint Sealers. Joint width for sealants: 3/8 inch unless otherwise indicated.

3.8 REPAIR, POINTING AND CLEANING

A. Remove and replace masonry units which are loose, chipped, broken, stained or otherwise damaged, or if units do not match adjoining units as intended. Provide new units to match adjoining units and install in fresh mortar or grout, pointed to eliminate evidence of replacement.

B. Pointing: During the tooling of joints, enlarge any voids or holes, and completely fill with mortar. Point-up all joints including corners, openings and adjacent work to provide a neat, uniform appearance, prepared for application of sealants.

C. Clean exposed CMU masonry by dry brushing at the end of each day's work and after final pointing to remove mortar spots and droppings. Comply with recommendations in NCMA TEK Bulletin No. 28.

1. Prepare exposed to view CMU surfaces to receive tile in accordance with Section 09300.

END OF SECTION 04200

SECTION 05500 - METAL FABRICATIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 DESCRIPTION OF WORK

A. Definition: Metal fabrications include items made from iron and steel shapes which are not a part of structural steel or other metal systems specified elsewhere and non-ferrous items listed herein.

B. Type of work in this section includes metal fabrications for assemblies which include but are not limited to the following:

1. Rough hardware.
2. Post Installed Anchors.
3. Countertop Brackets.

C. Related Work:

1. Section 03300 - Concrete Work.
2. Section 04200 - Unit Masonry.
3. Section 06100 - Carpentry.
4. Section 06400 - Architectural Woodwork.

1.3 QUALITY ASSURANCE

A. Codes and Standards:

ASTM A108-99 - Standard Specification for Steel Bars, Carbon, Cold-Finished, Standard Quality.

ASTM A307 - Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.

ASTM A500 – Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.

ASTM A563-00 - Standard Specification for Carbon and Alloy Steel Nuts.

ASTM A569/A569M-91a – Standard Specification for Steel, Carbon (.15 Maximum, Percent), Hot-Rolled Sheet and Strip Commercial Quality (superseded by A1011).

ASTM A1011/A1011M-03 - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability.

ASTM F844-00 - Standard Specification for Washers, Steel, Plain (Flat), Unhardened for General Use.

B. Field Measurements: Take field measurements prior to preparation of shop drawings and fabrication, where possible. Do not delay job progress; allow for trimming and fitting where taking field measurements before fabrications might delay work.

C. Shop Assembly: Preassemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation.

D. Regulatory Requirements: Products and finished installations to be used by persons with disabilities must comply with requirements of the Uniform Construction Code, American National Standard, Accessible and Usable Buildings and Facilities, ICC / ANSI A117.1.

E. Delegated Design Engineer Qualifications: A professional engineer who is legally qualified to practice in New Jersey where Project is located and who is experienced in providing engineering services of the type indicated.

1.4 SUBMITTALS

A. Product Data: Submit manufacturer's specifications, anchor details and installation instructions for products used in miscellaneous metal fabrications, including paint products and grout.

B. Shop Drawings: Submit shop drawings for fabrication and erection of miscellaneous metal fabrications. Include plans, elevations and details of sections and connections. Show anchorage and accessory items. Provide templates for anchor and bolt installation by others.

C. Where materials or fabrications are indicated to comply with certain requirements for design loadings, include structural computations, material properties and other information needed for structural analysis.

D. Samples: Submit 2 sets of representative samples of materials and finished products as may be requested by Architect.

E. Mill test reports: Reports indicating metals to be furnished comply with project requirements.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Metal Surfaces, General: For fabrication of miscellaneous metal work which will be exposed to view, use only materials which are smooth and free of surface blemishes including pitting, seam marks, roller marks, rolled trade names and roughness.

B. Brackets, Flanges and Anchors: Cast or formed metal of the same type material and finish as supported rails, unless otherwise indicated.

C. Fasteners:

1. General: Provide zinc-plated fasteners complying with ASTM B633, Class Fe/Zn 5, for exterior use or where built into exterior walls. Select fasteners for the type, grade and class required.

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

3. Weathering Steel Bolts and Nuts: Regular hexagon-head bolts, ASTM A325, Type 3, with hex nuts, ASTM A563, Grade C3; and where needed, flat washers.

4. Lag Screws: Square head type, ASME B18.2.1.

5. Machine Screws: Cadmium plated steel, ASME B18.6.3.

6. Wood Screws: Flat head, carbon steel, ASME B18.6.1.

7. Plain Washers: Round, carbon steel, ASME B18.22.1.

8. Masonry Anchorage Devices: Expansion shields, FS FF-S-325.

9. Expansion Anchors: Anchor bolt and sleeve assembly; Carbon-steel components zinc-plated to comply with ASTM B633, Class Fe/Zn 5.

10. Toggle Bolts: Tumble-wing type, FS FF-B-588, type, class and style as needed.

11. Lock Washers: Helical, spring type, carbon steel, ASME B18.21.1.

12. Anchor Bolts: ASTM F 1554, Grade 36, of dimension indicated; with nuts, ASTM A563; and where indicated, flat washers.

D. Anchors, General: Anchors capable of sustaining, without failure, a load equal to six times the load imposed when installed in unit masonry and four times the load imposed when installed in concrete, as determined by testing according to ASTM E488, conducted by a qualified independent testing agency.

E. Post-Installed Anchors:

1. Material for Interior Locations: Carbon-steel components zinc plated to comply with ASTM B633, Class Fe/Zn 5, unless otherwise indicated.

F. Paint:

1. Primer selected must be compatible with finish coats of paint. Coordinate selection of metal primer with finish paint requirements specified in Section 09900.

2.2 FABRICATION, GENERAL

A. Workmanship

1. Use materials of size and thickness indicated, or if not indicated, as required to produce strength and durability in finished product for use intended. Work to dimensions indicated or accepted on shop drawings, using proven details of fabrication and support. Use type of materials indicated or specified for various components of work.

2. Form exposed work true to line and level with accurate angles and surfaces and straight sharp edges. Ease exposed edges to a radius of approximately 1/32" unless otherwise indicated. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.

3. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners wherever possible. Use exposed fasteners of type indicated or, if not indicated, Phillips flat-head (countersunk) screws or bolts.

4. Provide for anchorage of type(s) shown, coordinated with supporting structure. Fabricate and space anchoring devices to provide adequate support for intended use.

5. Cut, reinforce, drill and tap miscellaneous metal work as indicated to receive finish hardware and similar items.

B. Shop Painting

1. Shop paint miscellaneous metal work, except members of portions of members to be anchored to masonry, surfaces and edges - galvanized surfaces, unless otherwise indicated.

2. Remove scale, rust and other deleterious materials before applying shop coat. Clean off heavy rust and loose mill scale in accordance with SSPC SP-2 "Hand Tool Cleaning", or SSPC SP-3 "Power Tool Cleaning", or SSPC SP-7 "Brush-Off Blast Cleaning".

3. Remove oil, grease and similar contaminants in accordance with SSPC SP-1 "Solvent Cleaning".

4. Immediately after surface preparation, brush or spray on primer in accordance with manufacturer's instructions, and at a rate to provide uniform dry film thickness of 2.0 mils for each coat. Use painting methods which will result in full coverage of joints, corners, edges and exposed surfaces.

5. Apply one shop coat to fabricated metal items, except apply two (2) coats of paint to surfaces inaccessible after assembly or erection. Change color of second coat to distinguish it from the first.

2.4 MISCELLANEOUS METAL FABRICATIONS

A. Rough Hardware

1. Furnish bent or otherwise custom fabricated bolts, plates, anchors, hangers, dowels and other miscellaneous steel and iron shapes as required for framing and supporting woodwork, and for anchoring or securing woodwork to concrete, masonry or other structures. Straight bolts and other stock rough hardware items as specified in Division-6 sections.

2. Fabricate items to sizes, shapes and dimensions required. Furnish malleable-iron washers for heads and nuts which bear on wood structural connections; elsewhere, furnish steel washers.

B. Countertop Brackets

1. Basis of Design: Cantilever Support Bracket, Model #HYB (1.5) 15" x 15", as manufactured by A&M Hardware Inc.; or approved equal.
   a. Steel brackets for the appearance of a floating countertop.
   b. Dimensions: 1½" w x 15" d x 15" h x 1/8" thick.
   c. Pre-drilled mounting holes.
   d. Color: Black powder coated.

2. Basis of Design: Cantilever Support Bracket, Model #RS-W-08-06, as manufactured by The Original Granite Bracket; or approved equal.
   a. Steel brackets for the appearance of a floating countertop.
   b. Dimensions: 2-1/2" w x 8" d x 6" h.
   c. Pre-drilled mounting holes.
   d. Color: Black powder coated.

2.4 MISCELLANEOUS MATERIALS

A. Injectable Mortar: Provide and install injectable mortar at all post-installed anchors, as follows:

1. Except where indicated on the drawings, post-installed anchors shall consist of the following anchor types as provided by Hilti, Inc.; or approved equal.
   a. Anchorage to Solid Grouted Masonry
      1) Adhesive Anchors:
         a) Hilti HIT-HY 70 Masonry Adhesive Anchoring System (ICC pending).
         b) Steel anchor element shall be Hilti HAS-E Continuously Threaded Rod or continuously deformed steel rebar.
      2) Mechanical Anchors:
         a) Hilti KWIK HUS-EZ Screw Anchor per ICC ESR-3056.
         b) Hilti KWIK BOLT-3 Expansion Anchors per ICC ESR-1385.
   b. Anchorage to Hollow/Multi-Wythe Masonry
      1) Adhesive Anchors:
         a) Hilti HIT-HY 70 Masonry Adhesive Anchoring System per ICC ESR-3342.
         b) Steel anchor element shall be Hilti HAS-E Continuously Threaded Rod or continuously deformed steel rebar.
         c) The appropriate size screen tube shall be used per adhesive Manufacturer's recommendation.

2. Anchor capacity used in design shall be based on the technical data published by Hilti or such other method as approved by the Architect. Contractor shall provide calculations demonstrating that the substituted product is capable of achieving the performance values of the specified product. Substitutions will be evaluated by their having an ICC ESR showing compliance with the relevant building code for seismic uses, load resistance, installation category, and availability of comprehensive installation

instructions. Adhesive anchor evaluation will also consider creep, in-service temperature and installation temperature.

3. Install anchors per the manufacturer instructions, as included in the anchor packaging.

4. The Contractor shall arrange an anchor manufacturer's representative to provide onsite installation training for all of their anchoring products specified. The Architect must receive documented confirmation that all of the Contractor's personnel who install anchors are trained prior to the commencement of installing anchors.

5. Anchor capacity is dependant upon spacing between adjacent anchors and proximity of anchors to edge of concrete. Install anchors in accordance with spacing and edge clearances indicated on the drawings.

6. Existing reinforcing bars in the concrete structure may conflict with specific anchor locations. Unless noted on the drawings that the bars can be cut, the Contractor shall review the existing structural drawings (if available) and shall undertake to locate the position of the reinforcing bars at the locations of the concrete anchors, by Hilti Ferroscan, GPR, X-Ray, chipping or other means.

PART 3 - EXECUTION

3.1 PREPARATION

A. Coordinate and furnish anchorages, setting drawings, diagrams, templates, instructions, and directions for installation of anchorages, such as sleeves, anchor bolts and miscellaneous items having integral anchors, which are to be embedded in masonry construction. Coordinate delivery of such items to project site.

3.2 INSTALLATION

A. General

1. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing miscellaneous metal fabrications to in-place construction; including, threaded fasteners for concrete and masonry inserts, toggle bolts, through-bolts, lag bolts, wood screws and other connectors as required.

2. Cutting, Fitting and Placement: Perform cutting, drilling and fitting required for installation of miscellaneous metal fabrications. Set work accurately in location, alignment and elevation, plus, level, true and free of rack, measured from established lines and levels. Provide temporary bracing or anchors in formwork for items which are to be built into masonry or similar construction.

3.3 ADJUST AND CLEAN

A. Touch-Up Painting: Immediately after erection, clean field bolted connections, and abraded areas of shop paint, and paint exposed areas with same material as used for shop painting. Apply by brush or spray to provide a minimum dry film thickness of 2.8 mils.

END OF SECTION 05500

SECTION 06100 - CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Type of work in this section includes rough carpentry for:

1. Dimensional lumber,
2. Wood nailers and blocking,
3. Rough hardware,
4. Construction panels.

1.3 SUBMITTALS

A. Material Certificates: Where dimensional lumber is provided to comply with minimum allowable unit stresses, submit listing of species and grade selected for each use, and submit evidence of compliance with specified requirements. Compliance may be in form of a signed copy of applicable portion of lumber producer's grading rules showing design values for selected species and grade. Design values shall be as approved by the Board of Review of American Lumber Standards Committee.

B. Wood Treatment Data: Submit chemical treatment manufacturer's instructions for handling, storing, installation and finishing of treated material.

C. Fire-Retardant Treatment: Include certification by treating plant that treated material complies with specified standard and other requirements.

1.4 PRODUCT HANDLING

A. Delivery and Storage: Keep materials under cover and dry. Protect against exposure to weather and contact with damp or wet surfaces. Stack lumber as well as plywood and other panels; provide for air circulation within and around stacks and under temporary coverings including polyethylene and similar materials.

B. Do not deliver finish carpentry materials, until painting, wet work, grinding and similar operations which could damage, soil or deteriorate woodwork have been completed in installation areas. If, due to unforseen circumstances, finish carpentry materials must be stored in other than installation areas, store only in areas meeting requirements specified for installation areas.

1.5 PROJECT CONDITIONS

A. Coordination: Fit carpentry work to other work; scribe and cope as required for accurate fit. Correlate location of furring, nailers, blocking, grounds and similar supports to allow attachment of other work.

B. Maintain temperature and humidity in installation areas as required to maintain moisture content of installed finish carpentry within a 1.0 percent tolerance of optimum moisture content, from date of installation through remainder of construction period. The fabricator of woodwork shall determine optimum moisture content and required temperature and humidity conditions.

PART 2 - PRODUCTS

2.1 LUMBER, GENERAL

A. Lumber Standards: Manufacture lumber to comply with PS 20 "American Softwood Lumber Standard" and with applicable grading rules of inspection agencies certified by American Lumber Standards Committee's (ALSC) Board of Review.

B. Inspection Agencies: Inspection agencies and the abbreviations used to reference with lumber grades and species include the following:

WWPA - Western Wood Products Association.

C. Factory-mark each piece of lumber with type, grade, mill and grading agency, except omit marking from surfaces to be exposed with transparent finish or without finish.

D. Nominal sizes are indicated, except as shown by detail dimensions. Provide actual sizes as required by PS 20, for moisture content specified for each use.

E. Provide dressed lumber, S4S, unless otherwise indicated.

F. Provide seasoned lumber with 19 percent maximum moisture content at time of dressing.

2.2 DIMENSION LUMBER

A. For light framing (2" to 4" thick, 2" to 4" wide) provide the following grade and species:

1. Construction grade: Any species of specified grade.

B. For exposed framing lumber provide material complying with the following requirements:

1. Definition: Exposed framing refers to dimension lumber which is not concealed by other work and is indicated to receive a stained or natural finish.

2. Grading: Hand select material at factory from lumber of species and grade indicated below for compliance with "Appearance" grade requirements of ALSC National Grading Rule; issue inspection certificate of inspection agency for selected material.

3. Same species and grade as indicated for structural framing.

2.3 MISCELLANEOUS LUMBER

A. Provide wood for support or attachment of other work including nailers, blocking and similar members. Provide lumber of sizes indicated, worked into shapes shown, and as follows:

1. Moisture content: 19 percent maximum for lumber items not specified to receive wood preservative treatment.

2. Grade: Construction Grade light framing size lumber of any species or board size lumber as required. Provide construction grade boards or No. 2 Boards.

2.4 CONSTRUCTION PANELS

A. Construction Panel Standards: Comply with PS 1 "U.S. Product Standard for Construction and Industrial Plywood" for plywood panels and, for products not manufactured under PS 1 provisions, with American Plywood Association (APA) "Performance Standard and Policies for Structural-Use Panels", Form No. E445.

B. Trademark: Factory-mark each construction panel with APA trademark evidencing compliance with grade requirements.

C. Concealed APA Performance-Rated Panels: Where construction panels will be used for the following concealed types of applications, provide APA Performance-Rated Panels complying with requirements indicated for grade designation, span rating, exposure durability classification, edge detail (where applicable) and thickness.

D. APA RATED SHEATHING

1. Exposure Durability Classification: EXTERIOR.
   a. Span Rating: As required to suit joist spacing indicated.

E. Fire-Retardant-Treated Plywood by Pressure Process: Products with a flame-spread index of 25 or less when tested according to ASTM E 84, and with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet (3.2 m) beyond the centerline of the burners at any time during the test.

1. Treatment shall not promote corrosion of metal fasteners.

2. Interior Type A: Treated materials shall have a moisture content of 28 percent or less when tested according to ASTM D 3201 at 92 percent relative humidity. Use where exterior type is not indicated.

3. Design Value Adjustment Factors: Treated lumber shall be tested according to ASTM D 5664 and design value adjustment factors shall be calculated according to ASTM D 6841.

2.5 MISCELLANEOUS MATERIALS

A. Fasteners and Anchorages: Provide size, type, material and finish as indicated and as recommended by applicable standards, complying with applicable Federal Specifications for nails, staples, screws, bolts, nuts, washers and anchoring devices. Provide metal hangers and framing anchors of the size and type recommended by the manufacturer for each use including recommended nails.

B. Where rough carpentry work is exposed to weather, in ground contact, or in area of high relative humidity, provide fasteners and anchorages with a hot-dip zinc coating (ASTM A 153).

C. Building Paper: ASTM D 226, Type I; asphalt saturated felt, non-perforated, 15-lb. type.

2.6 WOOD TREATMENT BY PRESSURE PROCESS

A. Fire-Retardant Treatment: Where fire-retardant treated wood ("FRT") is indicated or required, pressure impregnate lumber and plywood with fire-retardant chemicals to comply with AWPA C20 and C27, respectively, identify "FRT" lumber with appropriate classification marking of Underwriters Laboratories, Inc., U.S. Testing, Timber Products Inspection or other testing and inspecting agency acceptable to authorities having jurisdiction.

1. Fire treated wood shall have a flame spread of 25 or less and shall be dried to 19% moisture content for lumber and 15% for plywood. Exposed wood or wood subject to high humidity conditions shall be identified that the moisture content shall not exceed 28% when tested at 92% relative humidity in accordance with ASTM D3201.

2. Treatment products: The following products, provided they comply with requirements of the contract documents will be among those considered acceptable:
   a. "Dricon"; Hickson Corporation.
   b. "Flame Proof LHC"; Osmose Wood Preserving, Inc.
   c. "Pyro-Guard"; Hoover Treated Wood Products, Inc.
   d. Or approved equal.

3. Treat members shown on drawings and/or as required to meet the code requirements.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Discard units of material with defects which might impair quality of work, and units which are too small to use in fabricating work with minimum joints or optimum joint arrangement.

B. Set carpentry work to required levels and lines, with members plumb and true to line and cut and fitted.

C. Securely attach carpentry work to substrate by anchoring and fastening as shown and as required by recognized standards.

D. Countersink nail heads on exposed carpentry work and fill holes.

E. Use common wire nails, except as otherwise indicated. Use finishing nails for finish work. Select fasteners of size that will not penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting of wood; predrill as required.

3.2 WOOD NAILERS AND BLOCKING

A. Provide wherever shown and where required for screeding or attachment of other work. Form to shapes as shown and cut as required for true line and level of work to be attached. Coordinate location with other work involved.

B. Attach to substrates as required to support applied loading. Countersink bolts and nuts flush with surfaces, unless otherwise indicated. Build into masonry during installation of masonry work.

3.3 INSTALLATION OF CONSTRUCTION PANELS

A. General: Comply with applicable recommendations contained in Form No. E 30F, "APA Design/Construction Guide - Residential & Commercial," for types of construction panels and applications indicated.

B. Fastening Methods: Fasten panels as indicated below:

1. Sheathing: Screw to framing or substrates.

END OF SECTION 06100

SECTION 06400 - ARCHITECTURAL WOODWORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 DESCRIPTION OF WORK

A. Extent of type of architectural woodwork is indicated on the drawings.

B. Type of architectural woodwork includes the following:

1. Architectural cabinets including:
   a. Laminate clad lavatory vanities.
   b. Solid polymer fabrications countertops, aprons and backsplashes.
   c. Vanity cabinet hinges and latches.

C. Related Sections:

1. Section 05500 - Metal Fabrications.

2. Section 06100 - Carpentry.

3. Section 06650 - Solid Polymer Fabrications.

4. Section 07900 - Joint Sealer Assemblies

5. Section 10800 - Toilet Accessories

6. Division 15 - Plumbing Work

1.3 QUALITY ASSURANCE

A. AWI Quality Standard: Comply with applicable requirements of "Architectural Woodwork Quality Standards" published by the Architectural Woodwork Institute (AWI), except as otherwise indicated.

B. Special Project Warranty: Provide Manufacturer's / Installer's / Contractor's warrantees against delamination, warping, hardware and support system failure and deterioration of finish.

1. Warranty period shall be for **one (1) year** which shall start from approved date of substantial completion of work.

1.4 REFERENCES

A. AWI Quality Marking: Mark each assembled unit of architectural woodwork with manufacturer's identification and grade mark evidencing compliance with indicated AWI

quality grade. Locate grade mark on surfaces which will not be exposed after installation. For other items requiring field assembly, a certification of compliance may be substituted for marking of individual pieces.

1.5 SUBMITTALS

A. Product Data: Submit manufacturer's product data for each product and process specified as work of this section and incorporated into items of architectural woodwork during fabrication, finishing, and installation.

B. Quality Certification: Submit woodwork Manufacturer's (Fabricator's) certification, stating that fabricated woodwork complies with quality grades and other requirements indicated.

C. Shop Drawings: Submit shop drawings showing location of each item, dimensioned plans and elevations, large scale details, attachment devices and other components.

D. Laminated Plastic: Submit complete line of available patterns and colors for Architect's selection.

E. Solid Polymer Fabrications: Submit selected Colors: Refer to Section 06650.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Protect woodwork during transit, delivery, storage and handling to prevent damage, soiling and deterioration.

B. Do not deliver woodwork, until painting, wet work, grinding and similar operations which could damage, soil or deteriorate woodwork have been completed in installation areas. If, due to unforeseen circumstances, woodwork must be stored in other than installation areas, store only in areas meeting requirements specified for installation areas.

1.7 PROJECT CONDITIONS

A. Conditioning: Do not install woodwork until required temperature and relative humidity have been stabilized and will be maintained in installation areas.

B. Maintain temperature and humidity in installation area, as required, to maintain moisture content of installed woodwork within a 1.0% tolerance of optimum moisture content, from date of installation through remainder of construction period. Require Woodwork Manufacturer to establish optimum moisture content and required temperature and humidity conditions.

1.8 WARRANTY

A. Special Project Warranty: Provide Manufacturer's / Installer's / Contractor's warrantees against delamination, warping, hardware and support system failure and deterioration of finish.

1. Warranty period shall be for **one (1) year** which shall start from approved date of substantial completion of work.

PART 2 - PRODUCTS

2.1 BASIC MATERIALS AND FABRICATION METHODS

A. General: Except as otherwise indicated, comply with the following requirements for architectural woodwork not specifically indicated as prefabricated or prefinished standard products.

B. Wood Moisture Content: Provide kiln-dried lumber with an average moisture content range of 9% to 13% for exterior work and 6% to 11% for interior work. Maintain temperature and relative humidity during fabrication, storage and finishing operations so that moisture content values for woodwork at time of installation do not exceed the following:

1. Interior Wood finish: 5% - 10%.

C. Plastic Laminate: Comply with NEMA LD-3 for type, thickness, color, pattern and finish indicated for each application, or if not indicated as selected by Architect from manufacturer's standard products.

2.2 FABRICATION

A. Quality Standards: For following types of architectural woodwork comply with indicated standards as applicable.

1. Casework and Countertops: AWI Section 400
2. Miscellaneous Work: AWI Section 700

B. Design and Construction Features: Comply with details shown for profile and construction of architectural woodwork; and, where not otherwise shown, comply with applicable Quality Standards, with alternate details as approved by Architect.

C. Pre-Cut Openings: Fabricate architectural woodwork with pre-cut openings, where possible, to receive hardware, plumbing fixtures, electrical work and similar items. Locate openings accurately and use templates or roughing-in diagrams for proper size and shape. Smooth edges of cutoffs and, where located in countertops and similar exposures seal edges of cutouts with a water-resistant coating.

D. Measurements: Before proceeding with fabrication of woodwork required to be fitted to other construction, obtain field measurements and verify dimensions and shop drawing details as required for accurate fit.

1. Where sequence of measuring substrates before fabrication would delay the project, proceed with fabrication (without field measurements) and provide ample borders and edges to allow for subsequent scribing and trimming of woodwork for accurate fit.

2.3 ARCHITECTURAL VANITY, LAMINATE CLAD

A. Quality Standard: Comply with AWI Section 400 and its Division 400B.

B. Laminate Clad Cabinets: Comply with the following requirements:

1. Grade: Premium.

2. Type of Cabinet Construction: Flush overlay.

3. Laminate Cladding: On exposed surfaces provide high pressure decorative laminate complying with NEMA LD 3 and as follows:
   a. Horizontal surfaces: GP-50 (0.050" nominal thickness).
   b. Vertical surfaces: GP-50 (0.050" nominal thickness).

4. On semi-exposed surfaces provide plastic laminate BK-20, unless otherwise indicated.

5. Fabricate exposed edges of casework, including edges of doors when open, with matching plastic laminate, except as otherwise indicated.

2.4 CABINET HARDWARE AND ACCESSORY MATERIALS:

A. General: Provide cabinet hardware and accessory materials associated with architectural woodwork as indicated on the drawings.

PART 3 - EXECUTION

3.1 PREPARATION

A. Condition woodwork to average prevailing humidity conditions in installation areas prior to installing.

B. Pre-Installation Meeting: Meet at project site prior to delivery of architectural woodwork and review coordination and environmental controls required for proper installation and ambient conditioning in areas to receive work. Include in meeting the Contractor; Architect and other NJM Representatives (if any); installers of architectural woodwork, wet work such as painting, mechanical work and persons responsible for continued operation (whether temporary or permanent) of HVAC system, as required, to maintain temperature and humidity conditions. Proceed with woodwork installation only when everyone concerned agrees that required ambient conditions can be maintained.

C. Deliver masonry inserts and similar anchoring devices to be built into substrates, well in advance of time substrates are to be built.

D. Prior to installation of architectural woodwork, examine shop fabricated work for completion, and complete work as required, including back priming and removal of packing.

3.2 INSTALLATION

A. Install woodwork plumb, level, true and straight with no distortions. Shim as required using concealed shims. Install to a tolerance of 1/8" in 8'-0" for plumb and level (including tops); and with no variations in flushness of adjoining surfaces.

B. Scribe and cut woodwork to fit adjoining work, and refinish cut surfaces or repair damaged finish at cuts.

C. Anchor woodwork to anchors or blocking built-in or directly attached to substrates. Secure to blocking with countersunk, concealed fasteners and blind nailing, as required, for a complete installation. Except where prefinished matching fasteners heads are required, use fine finishing nails for exposed nailing, countersunk and filled flush with woodwork.

D. Countertops: Anchor securely to base units and other support systems as indicated.

3.3 ADJUSTMENT, CLEANING, FINISHING, AND PROTECTION

A. Repair damaged and defective woodwork where possible to eliminate defects functionally and visually; where not possible to repair replace woodwork. Adjust joinery for uniform appearance.

B. Clean and adjust hardware for proper operation.

C. Clean woodwork on exposed and semi-exposed surfaces. Touch-up shop-applied finishes to restore damaged or soiled areas.

D. Complete the finishing work specified as work of this section, to whatever extent not completed at shop or prior to installation of woodwork.

E. Provide final protection and maintain conditions, in a manner acceptable to Fabricator and Installer, which ensures architectural woodwork being without damage or deterioration at time of substantial completion.

END OF SECTION 06400

SECTION 06650 - SOLID POLYMER FABRICATIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes:

1. Integral countertops / bowls, aprons and backsplashes.

2. Personal shelves and aprons.

B. Related Sections:

1. Section 05500 - Metal Fabrications

2. Section 06100 - Carpentry

3. Section 06400 - Architectural Woodwork

4. Section 07900 - Joint Sealer Assemblies

5. Section 10800 - Toilet Accessories

6. Division 15 - Plumbing Work

1.3 SUBMITTALS

A. Product Data: Written technical information for unit specified. Indicate product description, fabrication information and compliance with specified performance requirements.

B. Shop Drawings:

1. Submit rough-in drawings. Include the following details and all other information necessary to demonstrate compliance with contract documents:
   a. Dimensions.
   b. Required clearances.
   c. Methods of assembling components.
   d. Anchorages.
   e. Coordination requirements with adjacent work.

C. Samples: Submit minimum 2 inch by 2 inch samples. Indicate full range of colors and pattern variation. Approved samples will be retained as a standard for work.

D. Certificates: Submit certification that work complies with requirements of contract documents.

E. Manufacturer's Instructions: Submit for each product specified in this section.

1. Include installation instructions and instructions for examination, preparation, and protection of adjacent work.

F. Maintenance Data: Submit manufacturer's care and maintenance data, including care, repair and cleaning instructions and maintenance video.

1. Provide maintenance kit for indicated finishes. Include in project close-out documents.

1.4 DELIVERY, STORAGE AND HANDLING

A. Deliver no components to project site until areas are ready for installation. Store indoors.

B. Handle materials to prevent damage to finished surfaces. Provide protective coverings to prevent physical damage or staining following installation for duration of project.

1.5 CLOSEOUT SUBMITTALS

A. Operational and Maintenance Data:

1. Submit manufacturer's care and maintenance data, including repair and cleaning instructions. Include in Project closeout documents.

2. Provide a commercial care and maintenance kit and video. Review maintenance procedures and warranty details with the Owner upon completion.

1.6 QUALITY ASSURANCE

A. Allowable Tolerances: Variation in component size: $\pm$1/8 inch.

1.7 WARRANTY

A. Provide manufacturer's warranty against defects in materials, fabrication and installation, excluding damages caused by physical or chemical abuse or excessive heat. Warranty shall provide for replacement or repair of material and labor for a period of **ten (10) years**, beginning at Date of Substantial Completion.

1. For fabrications with installed warranty coverage, identify by affixing manufacturer's fabrication/installation source plate.

PART 2 - PRODUCTS

2.1 SOLID POLYMER FABRICATIONS:

A. Basis of Design: Corian Surfaces as manufactured by Du Pont De Nemours & Co., Inc.

B. Material: Cast, filled, acrylic; not coated, laminated or of composite construction, meeting ANSI Z124 1980, Type Six, and FS WW-P-541E/GEN dated August 1, 1980.

2.2 PERFORMANCE CHARACTERISTICS:

PROPERTY	REQUIREMENT (min/max)	TEST PROCEDURE
Tensile Strength	5000 psi min	ASTM D638
Tensile Modulus	1.0×10^{6} psi min	ASTM D638
Flexural Strength	7000 psi min	ASTM D790
Flexural Modulus	1.0×10^{6}	ASTM D790
Elongation	0.3% min.	ASTM D638
Strain at Break	0.8% min.	ASTM D638
Hardness	90-Rockwell "M" scale 52-Barcol Impressor min.	ASTM D758
Thermal Expansion	3.5×10^{-6} in/in/deg C max 1.95×10^{-6} in/in/deg F max	ASTM D696
Color Stability	No change, min. 100 hours	NEMA LD3-3.10
Wear and Cleanability	Passes	ANSI Z124.3
Abrasion Resistance	No loss of pattern Weight loss (1000 cycles)=0.9 g. max.	NEMA LD3-3.01 ANSI Z124.3
Boiling water Surface Resistance	No Change	NEMA LD3-3.05
High Temperature Resistance	No Change	NEMA LD3-3.06

Conductive Heat Resistance	No Change	NEMA LD3-3.08
Impact Resistance		
Notched Izod	0.24 ft.-lbs./in. of notch min.	ASTM D256, Method A
Gardner	9.0 ft-lbs min.	ASTM D3029
Ball drop		NEMA LD3-303
1/4" sheet	36" min. with 1/2 lb ball, no failure	
1/2" sheet	140" min. with 1/2 lb ball, no failure	
3/4" sheet	200" min. with 1/2 lb ball, no failure	
Stain Resistance	Passes	ANSI Z124.3
Weatherability	No change, min. 1000 hours	ASTM D1499-84
Fungi and Bacteria	No Attack	ASTM G21, ASTM G22
Specific Gravity	1.6 min.	

Water Absorption Weight (% max.)	**24 hrs.**	**Long Term**	ASTM D570
	0.05 (1/4") max. 0.10 (3/4") max.	0.50 (1/4") max. 0.90 (3/4") max.	

Flammability — ASTM E84

Solid Colors

	1/4"	**1/2"**	**3/4"**
Flame spread	25 max	25 max	25 max
Smoke Developed	30 max	30 max	30 max
Class	1	1	1

Particulate Patterns

	1/4"	1/2"	3/4"
Flame spread	25 max	25 max	25 max
Smoke Developed	30 max	30 max	30 max
Class	1	1	1
Pittsburgh Protocol Toxicity (as used by NY state)	solids-80 grams min. particulate patterns-65 grams min.		"LC50" Test

2.3 ACCESSORY PRODUCTS

A. Joint Adhesive: Manufacturer's standard two-part adhesive kit to create inconspicuous, non-porous joints by chemical bond.

B. Panel Adhesive: Manufacturer's standard neoprene-based panel adhesive complying with ANSI A136.1-1967, UL listed.

C. Sealant: Manufacturer's standard mildew-resistant, FDA, UL listed silicone sealant in colors matching components.

2.4 COMPONENTS

A. Lavatory Tops with Integral Bowls: Molded countertop of solid polymer material, complete with integrally molded bowls of solid polymer material; edge details as indicated on Drawings.

1. Provide integral countertops / bowls as a complete unit with backsplashes. Size and shape of bowls, as shown on the Drawings.

2. Colors:
   a. Vanity top and backsplash - Platinum
   b. Bowl - Glacier White.

2.5 FABRICATION

A. Factory fabricate components to greatest extent practical to sizes and shapes indicated, in accordance with approved shop drawings and manufacturer's printed Instructions and technical bulletins.

B. Form joints between components using manufacturer's standard joint adhesive; without conspicuous joints. Reinforce with strip of solid polymer material, 2" wide.

C. Rout and finish component edges with clean, sharp returns. Rout cutouts, radii and contours to template. Smooth edges. Repair or reject defective and inaccurate work.

PART 3 - EXECUTION

3.1 GENERAL REQUIREMENTS

A. Prior to final approval of shop drawings, erect at project site one full size mock-up of each component required, for Architect's review.

B. Should mock-up not be approved, re-fabricate and reinstall until approval is secured. Remove rejected units from project site.

C. Approved mock-ups may remain as part of finished work.

3.2 FABRICATION

A. Fabricate components in shop to greatest extent practical to sizes and shapes indicated, in accordance with approved Shop Drawings and solid polymer manufacturer requirements. Form joints between components using manufacturer's standard joint adhesive without conspicuous joints. Provide factory cutouts for plumbing fittings and bath accessories as indicated on Drawings.

B. Where indicated, thermoform corners and edges or other objects to shapes and sizes indicated on Drawings, prior to seaming and joining. Cut components larger than finished dimensions and sand edges to remove nicks and scratches. Heat entire component uniformly prior to forming.

C. Ensure no blistering, whitening and cracking of components during forming.

D. Fabricate backsplashes from solid surfacing material with optional radius cove where counter and backsplashes meet as indicated on Drawings. Backsplashes for most colors may be fabricated by traditional means discussed in K-25294 Backsplashes.

E. Fabricate joints between components using manufacturer's standard joint adhesive. Ensure joints are inconspicuous in appearance and without voids. Attach 50 mm (2") wide reinforcing strip of solid polymer material under each joint. Reinforcing strip of solid polymer material is not required when using DuPont™ Joint Adhesive 2.0.

F. Provide holes and cutouts for plumbing accessories as indicated on Drawings.

G. Rout and finish component edges to a smooth, uniform finish. Rout cutouts, then sand edges smooth. Repair or reject defective or inaccurate work.

3.3 INSTALLATION

A. Install components plumb, level and rigid, scribed to adjacent finishes, in accordance with approved shop drawings and product data.

B. Fabricate field joints using manufacturer's recommended adhesive, with joints being inconspicuous in finished work. Exposed joints/seams are not permitted. Keep components and hands clean when making joints. Reinforce field joints as specified herein. Cut and finish component edges with clean, sharp returns.

C. Perform installation in accordance with manufacturer's instructions, except where more stringent requirements are shown or specified, and except where project conditions require extra precautions or provisions to ensure satisfactory performance of the work.

D. Install countertops with no more than 1/8" sag, bow or other variation from a straight line.

E. Adhere integral sink bowls to countertops using manufacturer's recommended adhesive and mounting hardware.

F. Keep components and hands clean during installation. Remove adhesives, sealants and other stains. Ensure components are clean on date of Substantial Completion of the Work.

G. Coordinate connections of plumbing fixtures with Plumbing Work specification on the Plumbing Work specification on the Plumbing Work specification on the Drawings.

3.4 CLEANING

A. Clean shop finished surfaces, touch-up as required, and remove or refinish damaged or soiled areas, as acceptable to Architect.

3.5 PROTECTION

A. Contractor to take all precautions as recommended by the manufacturer for protection of installed solid plastic products from damage by work of other trades.

END OF SECTION 06650

SECTION 07251 - REPAIR OF SPRAYED-ON FIREPROOFING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the repairs to existing sprayed-on fireproofing, where indicated or required.

1.3 SUBMITTALS

A. Product data for each type of sprayed-on fireproofing product indicated.

B. Test reports containing the following information:

1. Test results from an independent testing laboratory indicating compliance of sprayed-on fireproofing products with performance requirements indicated, including conformation of 0% asbestos content.

2. Test results of in-place performance as required under Part 3 of this section for field quality control.

C. Certificates from fireproofing manufacturer, for each fireproofing product required, indicating that:

1. Primers applied to steel in field are compatible with the existing sprayed-on fireproofing and will not impair its performance under fire exposure for applications indicated, as proved by ASTM E 119 test. Include test and other data as evidence.

2. Each fireproofing product required complies with specified product requirements and is suitable for the use indicated.

1.4 QUALITY ASSURANCE

A. Testing Laboratory Qualifications: To qualify for acceptance, an Independent Testing Laboratory must demonstrate to Architect's satisfaction, based on evaluation of laboratory-submitted criteria conforming to ASTM E 699, that it has the experience and capability to conduct satisfactorily the testing indicated without delaying the progress of the Work.

B. Single Source Responsibility: Obtain sprayed-on fireproofing materials from a single manufacturer for each different product required.

C. Fire Performance Characteristics: Provide materials and construction which are identical to those tested for the following fire performance characteristics, per test method indicated, by UL or other testing and inspecting organizations acceptable to authorities having jurisdiction.

D. Fire Resistance Ratings: As indicated by reference to design designation in UL "Fire Resistance Directory" for fire-resistance-rated assemblies in which sprayed-on fireproofing serves as direct-applied protection, tested per ASTM E 119.

E. Surface Burning Characteristics: As indicated for each sprayed-on fireproofing product required, tested per ASTM E 84 and listed in UL "Building Materials Directory".

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to project site in original, unopened packages with manufacturers' labels identifying products legible and intact. Include on labels names of products and manufacturers, date of manufacture and shelf life, where applicable. Also include UL labels for fire-resistance ratings applicable to project.

B. Use materials with limited shelf life within period indicated. Remove from project site and discard any materials whose shelf life has expired.

C. Store materials inside, under cover, above ground and in a manner to keep them dry until ready to use. Remove from project site and discard any materials that have been exposed to moisture or have otherwise deteriorated.

1.6 PROJECT CONDITIONS

A. Environmental Conditions: Do not install sprayed-on fireproofing when ambient or substrate temperatures are 40°F (4.4°C) and falling, unless temporary protection and heat can be provided to maintain temperatures of both at or above this temperature level for 24 hours before, during, and for 24 hours after application of sprayed fireproofing.

B. Ventilation: Ventilate spray fireproofing by means of natural or, where this is inadequate, of forced air circulation during and after application until it dries thoroughly.

1.7 SEQUENCING

A. Sequence and coordinate application of sprayed-on fireproofing with Owner’s Representative and General Contractor.

B. Provide temporary enclosures to prevent deterioration of sprayed-on fireproofing for interior applications due to exposure to unfavorable environmental conditions.

C. Avoid unnecessary exposure of sprayed-on fireproofing to abrasion and other damage likely to occur during construction operations subsequent to its application.

D. Do not install enclosing or concealing construction until after fireproofing has been applied, inspected, tested, and corrections made to any defective fireproofing.

PART 2 - PRODUCTS

2.1 SPRAYED-ON FIREPROOFING MATERIALS

A. Basis of Design: Provide Cementitious Fireproofing on structural steel framing and metal decking, as manufactured by one of the following:

1. "Monokote MK-6"; Grace Construction Products Div., W.R. Grace & Co.,
2. "Cafco 300", Isolatek International,
3. “Carbonline Type 15", Carbonline Protective Coatings and Linings,
4. “SWV Type 5", Southwest Fireproofing Co.,
5. Or approved equal.

B. Material Composition:

1. Cementitious Fireproofing: Factory-mixed dry formulation of inorganic binders and lightweight mineral aggregates mixed with water at project site to form a slurry for pumping and for dispersal by compressed air introduced at spray nozzle.
   a. Mineral fiber products will not be accepted for this project.

2. Dry Density (ASTM E605): 15 pcf. minimum average density regardless of density indicated in referenced fire-resistive design, or greater if required to attain fire-resistive rated indicated, and as determined per ASTM E 605.

3. Deflection: Material shall not crack or delaminate from the surface from the surface to which it is applied when tested in accordance with ASTM E759.

4. Bond Impact: Material subject to impact tests in accordance with ASTM E760; shall not crack or delaminate.

5. Bond Strength (ASTM E736): Minimum average bond strength of 200 psf, minimum individual bond strength of 150 psf.

6. Air Erosion (ASTM E859): Maximum allowable weight loss of material shall be 0.005 gm/sf.

7. Compressive Strength (ASTM E761): Shall not deform more than 10% when subjected to compressive forces of 1000 psf.

8. Noncorrosive, as determined by ASTM E937.

9. Abrasion Resistance: No more than 15 cc (cubic centimeters) shall be abraded or removed from the fireproofing substrate when tested by the methods of the City of San Francisco, Bureau of Building Inspection.

10. Impact Penetration: Material shall not show a loss of more than 6 cc when subjected to testing methods developed by the City of San Francisco, Bureau of Building Inspection.

11. Maximum flame spread (ASTM E84): 0.

12. Maximum Smoke developed (ASTM E84): 0.

13. Resistance to Mold: Add mix formulated at the time of manufacturing with mold inhibitor to comply with ASTM G21 testing procedure and shall show resistance to mold for 21 days for general use and 60 days for materials to be installed in plenums.

C. Fireproofing material shall have been tested and reported by Underwriters Laboratories, Inc. in accordance with the procedures of UL 263 (ASTM E119).

D. Mixing water shall be clean, fresh and suitable for domestic consumption and free from such amounts of mineral or organic substances as would affect the set of the fireproofing material.

2.3 HIGH DENSITY SPRAYED-ON FIREPROOFING - INTERIOR EXPOSED APPLICATION

A. Basis of Design: Provide one of the following:

a. Monokote Type Z-146; Grace Construction Products Div., W. R. Grace Corp.
b. Cafco 300; Isolatek International.
c. Carbonline Type 15
d. SWV Type 5", Southwest Fireproofing Co.
e. Or approved equal.

B. Coordinate manufacturer's requirements with Structural Steel and Metal Deck surface preparations.

C. Installation shall be for trowel grade material, "Trowel Finished" in accordance with manufacturer's instructions and recommendations.

2.4 AUXILIARY FIREPROOFING MATERIALS

A. General: Provide auxiliary fireproofing materials that are compatible with sprayed-on fireproofing products and substrates, are approved for use indicated by manufacturer of sprayed-on fireproofing, and are approved by UL or other testing and inspecting agency acceptable to authorities having jurisdiction for use in fire-resistance rated designs indicated.

B. Substrate Primers: Type approved by manufacturer of sprayed-on fireproofing for substrate and for conditions of exposure indicated.

C. Adhesive for Bonding Fireproofing: Type recommended and approved by manufacturer of sprayed-on fireproofing.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, with Installer present, to determine if they are in satisfactory condition to receive sprayed-on fireproofing. A substrate is in satisfactory condition if it complies with the following:

1. Substrate complies with requirements of the section in which the substrate and related work is specified and is free of oil, grease, rolling compounds, incompatible primers, loose mill scale, dirt or other foreign substances capable of impairing bond of fireproofing with substrate under conditions of normal use or fire exposure.

2. Objects which will penetrate fireproofing, including clips, hangers, support sleeves and similar items have been securely attached to substrates.

3. Substrates are not obstructed by ducts, piping, equipment and other suspended construction that could interfere with application of fireproofing.

B. For steel, sheet metal and other substrates suspected of being coated with oil, rolling compounds or other substances not readily identifiable but potentially capable of impairing bond, conduct tests recommended by fireproofing manufacturer to determine their presence and effect on adhesion of fireproofing.

C. Do not proceed with installation of fireproofing until unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean substrates of substances which could impair bond of fireproofing, including oil, grease, rolling compounds, incompatible primers, and loose mill scale.

B. Do not prime substrates unless recommended by fireproofing manufacturer, and except where compatible shop primer was applied and is in satisfactory condition to receive fireproofing.

C. Cover other work which might be damaged by fall-out or overspray of fireproofing materials during application. Provide temporary enclosure as required to confine spraying operations, protect the environment, and to ensure adequate ambient conditions for temperature and ventilation.

3.3 INSTALLATION, GENERAL

A. General: Comply with fireproofing manufacturer's instructions for mixing materials, for application procedures and for types of equipment used to convey and spray-on fireproofing materials; as applicable to the particular conditions of installation and as required to achieve fire-resistance ratings indicated.

B. Coat substrates with adhesive prior to application of fireproofing where required to achieve fire-resistance rating or recommended by fireproofing manufacturer for material and application indicated.

C. Extend fireproofing full thickness over entire area of each substrate to be protected. Unless otherwise recommended by fireproofing manufacturer, install body of fireproof covering in a single course.

D. Apply fireproofing in thicknesses and densities not less than that required to achieve fire resistance ratings designated for each condition, unless greater thicknesses and densities are indicated.

E. Apply fireproofing materials by sprayed-on method to maximum extent possible. Following spraying operation in each area, complete the coverage by trowel application or other placement method acceptable to manufacturer.

3.4 FIELD QUALITY CONTROL

A. Testing Laboratory: Contractor shall employ and pay a qualified Independent Testing Laboratory to perform field quality control testing. Testing Laboratory must be approved by the Architect / Owner prior to performing field quality control testing.

B. Extent and Testing Methodology: Arrange for testing of completed fireproofing in successive stages in areas of extent described below; do not proceed with fireproofing of next area until test results for previously completed work evidence compliance with requirements.

1. Within each area, testing laboratory shall randomly select one typical structural element of each type and test fireproofing for cohesion/adhesion per ASTM E 736.

2. Thickness for Structural Frame Members: Form a sample of 25 percent of structural members per floor, taking 9 measurements at a single cross section for structural frame beams or girders, 7 measurements of a single section for joists and trusses and 12 measurement of a single cross section for columns per ASTM E 605.

C. Testing Laboratory shall report test results promptly and in writing to Contractor and Architect.

D. Repair or replace fireproofing within areas where test results indicate fireproofing does not comply with requirements.

3.5 PATCHING AND REPAIR WORK

A. Coordinate installation of fireproofing with other work in order to minimize the need for other trades to cut or remove fireproofing. As other trades successively complete installation of their work, maintain protection of structure afforded by fireproofing by patching any areas which have been removed or damaged prior to concealment of fireproofing by other work.

1. All patching and repairing of sprayed-on applied fireproofing, including damage which occurs during work by other trades, shall be performed with same materials under this section, without any additional cost to the Owner.

3.6 CLEANING AND PROTECTION

A. Cleaning: Immediately upon completion of spraying operations in each containable area of project, remove over-spray and fall-out of materials from surfaces of other work and clean exposed surfaces to remove evidence of soiling.

B. Cure exposed cementitious fireproofing materials in compliance with fireproofing manufacturers recommendations to prevent premature drying.

C. Protect fireproofing according to advice of fireproofing manufacturer and Installer from damage resulting from construction operations or other causes so that fireproofing will be without damage or deterioration at time of Substantial Completion.

D. Repair or replace work which has not been successfully protected.

END OF SECTION 07251

SECTION 07900 - JOINT SEALER ASSEMBLIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Part 1 through Part 6 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes joint sealant assemblies for the following applications which include performances of materials, installation requirements, as indicated herein in this Specification and as specified by cross references in other Parts 1 through 6 Specification sections.

B. Interior joints in the following vertical surfaces and horizontal nontraffic surfaces:

1. Tile control and expansion joints.

2. Vertical control joints on exposed surfaces of interior walls and partitions.
   a. Joints between plumbing fixtures and adjoining walls, floors, and counters.
   b. Other joints, as indicated.

3. Interior joints in the following horizontal traffic surfaces:
   a. Control and expansion joints in tile flooring.
   b. Other joints, as indicated.

C. Preparation of all joints to be sealed.

1.3 QUALITY ASSURANCE

A. Fire Performance Characteristics: Where fire rated joint assemblies are indicated, provide materials and construction which are identical to those of assemblies whose fire endurance has been determined by testing in compliance with the following requirements, tested by a recognized testing and inspecting organization or by another means, as acceptable to Authority Having Jurisdiction.

1. Fire Testing: ASTM E 119/UL 263.

2. Surface Burning Characteristics: ASTM E84/UL 723.
   a. Flame Spread: 15
   b. Smoke Developed: 0

3. Through - Penetration Firestopping: ASTM E814/UL 1479.

4. Fire Resistance of Building Joint Systems: UL 2079

B. VOC Content of Interior Sealants and Sealant Primers: Comply with the following limits when calculated according to 40 CFR 59, Subpart D (EPA Method 24):

1. Sealants: Not more than 250 g/L.

2. Sealant Primers for Nonporous Substrates: Not more than 250 g/L.

3. Sealant Primers for Porous Substrates: Not more than 775 g/L.

C. Installer Qualifications: An experienced installer who has specialized in installing joint sealants similar in material, design, and extent to those indicated for this Project and whose work has resulted in joint-sealant installations with a record of successful in-service performance.

1. Source Limitations: Obtain each type of joint sealant through one source from a single manufacturer.

2. Preconstruction Compatibility and Adhesion Testing: Submit to joint sealant manufacturers, for testing indicated below, samples of materials that will contact or affect joint sealants.
   a. Use manufacturers standard test methods to determine whether priming and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of joint sealants to joint substrates.
   b. Testing will not be required if joint sealant manufacturers submit joint preparation data that are based on previous testing of current sealant products for adhesion to, and compatibility with, joint substrates and other materials matching those submitted.
   c. Preconstruction Field-Adhesion Testing: Before installing elastomeric sealants, field test their adhesion to joint substrates as follows:
      (1) Locate test joints where indicated or, if not indicated, as directed by Architect.
      (2) Conduct field tests for each application indicated below:
         (a) Each type of elastomeric sealant and joint substrate indicated.
         (b) Each type of nonelastomeric sealant and joint substrate indicated.
      (3) Notify Architect seven days in advance of dates and times when test joints will be erected.
      (4) Sealant Manufacturer Responsibility:
         (a) Manufacturer shall provide Technical Representative to perform Sealant Joint Field Pull Test. Manufacturer Sales Representative is not acceptable to perform Field Pull Test.
         (b) Technical Representative performing Field Pull Test must be an employee of the Sealant Manufacturer. Outside Sales Agent or Contract Technical Representative is not acceptable to perform Field Pull Test.
      (5) Test Method: Test joint sealants by hand-pull method described below:
         (a) Install joint sealants in 60-inch long joints using same materials and methods for joint preparation and joint-sealant installation required for the completed Work. Allow sealants to cure fully before testing.
         (b) Make knife cuts from one side of joint to the other, followed by two cuts approximately 2 inches long at sides of joint and meeting cross cut at one end. Place a mark 1 inch from cross-cut end of 2-inch piece.
         (c) Use fingers to grasp 2-inch piece of sealant between cross-cut end and 1-inch mark; pull firmly at a 90-degree angle or more in direction of side cuts while holding a ruler along side of sealant. Pull sealant out of joint to the distance recommended by sealant manufacturer for testing adhesive capability, but not less than that equaling specified maximum movement capability in extension; hold this position for 10 seconds.

(d) For joints with dissimilar substrates, check adhesion to each substrate separately. Do this by extending cut along one side, checking adhesion to opposite side, and then repeating this procedure for opposite side.

(6) Report whether sealant in joint connected to pulled-out portion failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each type of product and joint substrate. For sealants that fail adhesively, retest until satisfactory adhesion is obtained.

(7) Evaluation of Preconstruction Field-Adhesion-Test Results: Sealants not evidencing adhesive failure from testing, in absence of other indications of noncompliance with requirements, will be considered satisfactory. Do not use sealants that fail to adhere to joint substrates during testing.

3. Mockups: Before installing joint sealants, apply elastomeric sealants as follows to verify selections made under sample Submittals and to demonstrate aesthetic effects and qualities of materials and execution:
   a. Joints in mockups of assemblies specified in other Sections that are indicated to receive elastomeric joint sealants, which are specified by reference to this Section.
   b. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Meetings."

4. PROJECT CONDITIONS
   a. Environmental Limitations: Do not proceed with installation of joint sealants under the following conditions:
      (1) When ambient and substrate temperature conditions are outside limits permitted by joint sealant manufacturer.
      (2) When ambient and substrate temperature conditions are outside limits permitted by joint sealant manufacturer or are below 40°F.
      (3) When joint substrates are wet.
   b. Joint-Width Conditions: Do not proceed with installation of joint sealants where joint widths are less than those allowed by joint sealant manufacturer for applications indicated.
   c. Joint-Substrate Conditions: Do not proceed with installation of joint sealants until contaminants capable of interfering with adhesion are removed from joint substrates.

D. Special Project Warrantee and Guarantee:

1. Special Installer's Warranty: Written warranty, signed by Installer agreeing to repair or replace elastomeric joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
   a. Warranty Period: **Five (5) years** from approved date of Substantial Completion.

2. Special Manufacturer's Warranty: Written warranty, signed by elastomeric sealant manufacturer agreeing to furnish elastomeric joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.
   a. Warranty Period: **Five (5) years** from approved date of Substantial Completion.

1.4 SUBMITTALS

A. Product Data from manufacturers for each joint sealer product required, including instructions for joint preparation and joint sealer application, include color samples showing full range of colors available, for each product exposed to view.

1. Product Certificates: Signed by manufacturers of joint sealants certifying that products furnished comply with requirements and are suitable for the use indicated.

B. Product Test Reports: From a qualified testing agency indicating sealants comply with requirements, based on comprehensive testing of current product formulations.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to Project site in original unopened containers or bundles with labels informing about manufacturer, product name and designation, color, expiration period for use, pot life, curing time, and mixing instructions for multi-component materials.

B. Store and handle materials in compliance with manufacturers' recommendations to prevent their deterioration or damage due to moisture, high or low temperatures, contaminants, or other causes.

1.6 PROJECT CONDITIONS

A. Environmental Conditions: Do not proceed with installation of joint sealers under the following conditions:

1. When ambient and substrate temperature conditions are outside the limits permitted by joint sealer manufacturers.

2. When ambient and substrate temperature conditions are outside the limits permitted by joint sealer manufacturer or below 40°F (4.4°C).

3. When joint substrates are wet due to condensation, or other causes.

B. Joint Width Conditions: Do not proceed with installation of joint sealers where joint widths are less than allowed by joint sealer manufacturer for application indicated.

C. Joint Substrate Conditions: Do not proceed with installation of joint sealers until contaminants capable of interfering with their adhesion are removed from joint substrates.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Compatibility: Provide joint sealers, joint fillers and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.

B. Colors: Provide color of exposed joint sealers indicated or, if not otherwise indicated, as selected by Architect from manufacturer's available full range of standard and optional colors.

C. Grade of Sealant: For each application, provide the grade of sealant (nonsag, self-leveling, no track, knife grade, etc.) as recommended by the manufacturer for the particular condition of installation (location, joint shape, ambient temperature, and similar conditions) to achieve the best possible overall performance. Grades specified herein are for normal condition of installation.

2.2 MISCELLANEOUS MATERIALS

A. Joint Primer/Sealer: Provide the type of joint primer/sealer recommended by the sealant manufacturer of the joint surfaces to be primed or sealed.

B. Bond-Breaker Tape: Polyethylene tape or other plastic tape as recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.

C. Sealant Backer Rod: Provide materials which are in compliance with ASTM D 1056; compressible rod stock of polyethylene foam, polyethylene jacketed polyurethane foam. butyl rubber foam, neoprene foam or other flexible, permanent, durable non-absorptive material as recommended for compatibility with sealant by the sealant manufacturer.

1. Materials shall be capable of remaining resilient at temperatures down to minus 26°F.

2.3 SEALANTS

A. **Sealant Type 3:** For all interior joints, provide a one-part, non-sag, moisture-curing polyurethane rubber sealant, complying with ASTM C 920, Type S, Grade NS, Class 25, Use NT, M, A, O and as recommended by manufacturer for general use as an interior exposed building construction conditions sealant including floor tiles in Toilets - Section 09300.

1. Products: Subject to compliance with requirements, provide one of the following:
   a. "Dynatrol I-XL"; Pecora Corporation.
   b. "Dymonic or Dymonic FC for cold weather"; Tremco, an RPM Co.
   c. "Chem-Calk 900 /915/945"; Bostik Inc.
   d. "Sikaflex 1a or Sikaflex 15LM"; Sika Corporation.
   e. Or approved equal.

B. **Sealant Type 4:** For all joints at plumbing fixtures, provide one-part, neutral-curing, silicone rubber sanitary sealant, complying with ASTM C920; and containing fungicide for mildew resistance recommended by manufacturer for use at joints for plumbing fixtures, sinks, countertops, etc.

1. Products: Subject to compliance with requirements, provide one of the following:
   a. "898 Silicone"; Pecora Corporation.
   b. "Tremsil 200"; Tremco, an RPM Co.
   c. "786 Mildew Resistant"; Dow Corning.
   d. "Sikasil N-Plus"; Sika Corporation.
   e. Or approved equal.

C. **Sealant Type 5**: For all interior joints between drywall partitions, CMU walls, hollow metal framing, other metal mechanical or electrical assemblies, (sealant work performed by other trades and cross-referenced to the Work of this section), etc., where all adjacent surfaces will receive paint:

1. Latex Sealant: Non-elastomeric, one part, non-sag, paintable latex sealant recommended for exposed joints applications, complying with ASTM C 834, Type P (opaque sealants), Grade NF.

2. Products: Subject to compliance with requirements, provide one of the following:
   a. “AC-20 Plus Silicone”; Pecora Corporation.
   b. “Tremflex 834"; Tremco, an RPM Co.
   c. “Sonolastic Sonolac”; Sonneborn Building Products Div., ChemRex, Inc.
   d. Or approved equal.

2.4 FIRE RATED JOINTS

A. Construction fire rated joint assemblies shall meet indicated fire rating performance requirements. Provide assemblies where required and as indicated on the drawings with the following components:

1. Joint Filler: Subject to compliance with indicated requirements, provide one of the following:
   a. "Ultra Block", as manufactured by Backer Rod Manufacturing,
   b. "Cerablanket"; Tremco,
   c. ThermaFiber
   d. Or approved equal.
   e. Provide fire rated joint filler in thickness and shape as required to fill joints.

2. Joint Sealant: Subject to compliance with requirements, provide one of the following:
   a. "Dynatrol II"; Pecora Corporation.
   b. “Tremstop Acrylic”; Tremco, Inc, or “Trimstop IA, Intumescent Acrylic, Tremco, Inc.
   c. “Sikaflex-2c NS”; Sika Corporation.
   d. Equivalent by Dow Corning.
   e. Or approved equal.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine joints indicated to receive joint sealers, with Installer present, compliance with requirements for joint configuration, installation tolerances and other conditions affecting joint sealer-performance. Do not proceed with installation of joint sealers until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealers to comply with recommendations of joint sealer manufacturers and the following requirements:

B. Remove all foreign material from joint substrates which could interfere with adhesion of joint sealer, including dust; paints, except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer; old joint sealers; grease; water; and surface dirt.

C. Clean concrete, masonry, unglazed surfaces of ceramic tile and similar porous joint substrate surfaces, by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealers. Remove loose particles remaining from above cleaning operations by vacuuming or blowing out joints with oil-free compressed air.

D. Remove laitance and form release agents from existing concrete (where present).

E. Clean metal, glazed surfaces of ceramic tile; and other nonporous surfaces by chemical cleaners or other means which are not harmful to substrates or leave residues capable of interfering with adhesion of joint sealers.

F. Joint Priming: Prime joint substrates where indicated or where recommended by joint sealer manufacturer based on preconstruction joint sealer-substrate tests or prior experience. Apply primer to comply with joint sealer manufacturer's recommendations. Confine primers to areas of joint sealer bond, do not allow spillage or migration onto adjoining surfaces.

G. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces which otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

H. Install joint fillers of type indicated to provide support of sealants during application and at position required to produce the cross-sectional shapes and depths of installed sealants relative to joint widths which allow optimum sealant movement capability.

1. Do not leave gaps between ends of joint fillers.

2. Do not stretch, twist, puncture, or tear joint fillers.

3. Remove absorbent joint fillers which have become wet prior to sealant application and replace with dry material.

I. Install bond breaker tape between sealants and joint fillers, compression seals, or back of joints where adhesion of sealant to surfaces at back of joints would result in sealant failure.

J. Install compressible seals serving as sealant backings to comply with requirements indicated above for joint fillers.

K. Installation of Sealants: Install sealants by proven techniques that result in sealants directly contacting and fully wetting joint substrates, completely filling recesses provided for each joint configuration, and providing uniform, cross-sectional shapes and depths relative to joint widths which allow optimum sealant movement capability.

3.3 CLEANING

A. Clean off excess sealants or sealant smears adjacent to joints as Work progresses by methods and with cleaning materials approved by manufacturers of joint sealers and of products in which joints occur.

END OF SECTION 07900

SECTION 08305 - ACCESS DOORS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes: Wall access doors.

B. Type of construction in which access doors are installed include:

1. Masonry w/ tile finish.

C. Exact locations and sizes of access doors may not be indicated on the drawings. Obtain specific locations and sizes for access doors from trades requiring access to concealed equipment.

D. Related Sections:

1. Section 04200 - Unit Masonry.
2. Section 09300 - Tile.
3. Division 15 - General requirements for access doors: Mechanical Work.
4. Division 16 - General requirements for access doors: Electrical Work.

1.3 SUBMITTALS

A. Product Data: Submit manufacturer's technical data and installation instructions for type of access door assembly, including setting drawings, templates, instructions and directions for installation of anchorage devices.

1. Include complete schedule, including types, general locations, sizes, wall construction details, finishes, latching or locking provisions, and other data pertinent to installation.

B. Verification: Obtain specific locations and sizes for required access door(s) from trades requiring access to concealed equipment and indicate on the submittal schedule.

C. Special Size Access Doors: Use where required or requested; indicate on schedule.

D. Shop Drawings: Submit shop drawings for fabrication and installation of customized access doors and frames, including details of each frame type, elevations of door design types, anchorage and accessory items.

E. Samples: 3" x 5" minimum size, of each panel face material showing factory-finished color and texture.

1.4 QUALITY ASSURANCE

A. Size Variations: Obtain Architect's acceptance of manufacturer's standard size units which are different than actual opening size necessary for access.

B. Coordination: Furnish inserts and anchoring devices which must be built into other work for installation of access doors. Coordinate delivery with other work to avoid delay.

1.5 WARRANTY

A. Manufacturer's standard **five (5) year** warranty against defects in material and workmanship from date of purchase.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering access doors which may be incorporated in the work include, but are not limited to, the following:

1. Bilco Company.
2. J. L. Industries.
3. Milcor/Lima Register.
4. Bar-Co., Inc.
5. Or approved equal.

2.2 MANUFACTURED UNIT

A. Access Door Assembly 3:

1. Location: Wall.
2. Type: Flush door panel with exposed frame.
3. Substrate: Masonry.
4. Frame: 16 gauge steel.
5. Doors: 14 gauge steel flush panel.
6. Hinge: Continuous type hinge with stainless steel pin.
7. Locking Device: Keyed cylinder lock.
8. Finish: Baked-on rust-inhibitive prime coat.

2.3 ACCESSORIES

A. Locking Devices:

1. Locking devices: provide one lock per access door.
2. Supply four (4) keys with each lock.
3. Key access door locks alike.

2.4 MATERIALS AND FABRICATION

A. General: Furnish each access door assembly manufactured as an integral unit, complete with all parts and ready for installation.

B. Steel Access Doors and Frames: Fabricate units of continuous welded steel construction, unless otherwise indicated. Grind welds smooth and flush with adjacent surfaces. Furnish attachment devices and fasteners of type required to secure access panels to types of support shown.

C. Frames: Fabricate from 16 gauge steel.

D. Fabricate frame with exposed flange nominal 1" wide around perimeter of frame for units installed in the following construction:

1. Exposed masonry with ceramic tile finish.

E. For installation in masonry construction, furnish frames with adjustable metal masonry anchors.

F. Recessed Panel Doors: Fabricate from not less than 18 gauge sheet steel with face of panel formed to provide recess below surface of applied ceramic tile finish. Reinforce panel as required to prevent buckling. Finish with manufacturer's factory-applied prime paint.

G. Locking Devices: Furnish flush, screwdriver-operated cam locks of number required to hold door in flush, smooth plane when closed.

H. Provide one cylinder lock per access door. Furnish four (4) keys per lock. Key all locks alike, unless otherwise scheduled.

I. Where shown or scheduled, provide one cylinder lock per access door. Furnish four (4) keys per lock. Key all locks alike, unless otherwise indicated.

J. For recessed panel doors, provide access sleeves for each locking device. Furnish plastic grommets and install in holes cut through finish.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with manufacturer's instructions for installation of access doors.

B. Coordinate installation with work of other trades.

C. Set frames accurately in position and securely attach to supports with face panels plumb or level in relation to adjacent finish surfaces.

D. Where the Plumbing, Mechanical, or Electrical (MEP) Subcontractor(s) require an access door to be installed to provide access to valves, etc., the MEP Subcontractor shall provide the access door and the General Contractor shall install the access door.

3.2 ADJUST AND CLEAN

A. Adjust hardware and panels after installation for proper operation.

B. Remove and replace panels or frames which are warped, bowed or otherwise damaged.

END OF SECTION 08305

SECTION 08700 - FINISH HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The General Provisions of the Contract, including General and Supplementary Conditions and General Requirements, apply to the work specified in this section.

1.2 DESCRIPTION OF WORK

A. The work in this section includes providing all labor, materials, appliances, and services required to completely furnish and deliver all finish hardware and related work, complete in accordance with the Architect's Drawings and Specifications, including, but not limited to the following:

1. All finish hardware for existing hollow metal doors in hollow metal frames is indicated on drawing A601.

2. Furnish all finish hardware necessary to complete the project, whether particularly mentioned or not, and match in quality and finish the material specified.

1.3 QUALITY ASSURANCE

A. Manufacturer: Obtain each kind of material (pull & push, closers, wall stops, kick plates, etc.) from only one manufacturer of the respective item, although several may be indicated as offering products complying with requirements.

B. Supplier: A recognized supplier, who has been furnishing Builders Hardware, in the project's vicinity, for a recommended period of not less than 3 years, and who is, or employs an experienced Architectural Hardware Consultant who is a recognized member of the Door and Hardware Institute, available at reasonable times during the course of the work, for consultation about the project's material requirements to the Owner, Architect, and Contractor. All hardware is to be supplied by one dealer.

C. Where applicable, all hardware shall be in conformance with the State of New Jersey "Barrier-Free" Subcode and ICC - ANSI A117.1

1.4 SUBMITTALS

A. Submittals shall conform to the requirements specified in Part 1.

B. The hardware dealer shall submit to the Architect and NJM Representative, at least six (6) copies of a detailed Hardware Schedule and Catalog Cut Sheets. These schedules shall be complete and describe in detail the finish hardware for all door openings, or occurrences of finish hardware. These schedules are to be checked and approved by the Contractor and Architect. No hardware is to be ordered nor templates issued, prior to the receipt, by the Hardware Dealer, of these approved schedules. Upon approval of the schedules, the Contractor shall supply the Architect with six (6) final copies.

C. The finish hardware schedules submitted shall include information as indicated below. These schedules are intended for coordination of the work.

D. Final finish hardware content: Based on materials indicated, organize schedule into "Hardware Sets", indicating complete destinations of every item required for each door or opening. Include the following information:

1. Type, style, function, size and finish of each item.

2. Name and manufacturer of each item including catalog cuts of each item.

3. Fastenings and other pertinent information.

4. Location of Hardware Set, cross-referenced to indications on Drawings, both on floor plan and in hardware schedule.

5. Explanation of all abbreviations, symbols, codes, etc., contained in the schedule.

6. Mounting locations for hardware.

E. Submittal Sequence: Submit detailed finish hardware scheduled within 30 days of award of Contract.

1.5 DELIVERY AND PACKAGING

A. All items of finish hardware shall be delivered to the project site.

B. Package each item of hardware separately in individual containers, complete with necessary screws and instructions. Mark each container with item number corresponding to the number shown on the hardware schedule.

C. Furnish wrapping for all handles, and pulls for protection during construction.

1.6 WARRANTY

A. Guarantee workmanship and material provided against defective manufacture. Repair or replace defective workmanship and material appearing within period of **one (1) year** after substantial completion.

B. Provide **twenty-five (25) year** factory warranty on door closers against defects in material and workmanship from date of occupancy of project.

1.9 JOB CONDITIONS

A. Field Service: Hardware Supplier: Assign a competent representative, acceptable to the Architect to be at the jobsite each time a major shipment of finish hardware is received. Such representative shall assist in "checking in" these shipments and shall secure a receipt covering the contents of each shipment. In addition, such representative shall be available for immediate call to the jobsite when, in the opinion of the Architect, their presence is necessary.

B. Templates: Following approval of the Hardware Schedule by the Architect, furnish and deliver template information to the fabricators of items to which finish hardware is to be applied in ample time to avoid delays in such work of said fabricators. Provide drawings,

schedules and detailed information to other trades as necessary for them to accommodate and prepare their work to receive the finish hardware.

C. Cooperation and Coordination:

1. Cooperate and coordinate work with that of other trades supplying materials or performing work in contact with, connecting to, underlying, or overlaying the work of this Section.

2. Provide complete data of requirements for work of this Section to those other trades whose work is affected by or dependent upon the work of this Section.

3. Furnish all items to be built into other work in ample time to avoid delaying the progress of such work.

4. Examine all drawings covering the work of this Section, which may affect the work of this Section or require coordination by this trade.

D. Existing Conditions: Hardware supplier: Verify all existing conditions in the field to ensure compatibility with finish hardware specified in Hardware Sets herein, prior to submission. Any discrepancies between the existing field conditions and finish hardware specified shall be brought to the attention of the Architect immediately. Hardware supplier shall not order any finish hardware until all discrepancies are rectified and the Architect grants written approval.

1.7 GENERAL

A. The material called for under this section shall provide for all of the hardware required, whether the same is particularly specified or not. If the hardware for any particular location is not described herein, it should be provided and shall be like that specified for similar locations so far as practicable. If no similar locations are specified, such hardware must be of a suitable type approved by the Architect.

B. Provide screws of proper type and compatible material, with shields, anchors, plugs, toggle nuts, etc., as required for the attachment of all items of hardware herein specified. All exposed screws shall have flat head, Phillips-type heads and shall be finished to match the item of hardware for which it is intended.

1.8 CLOSEOUT SUBMITTALS

A. Maintenance Data: For each type of door hardware to include in maintenance manuals. Include final hardware schedule.

1.9 MAINTENANCE SERVICE

A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS

A. Manufacturers: The following listed material is intended to serve as a guide for the requirements of this project. Hardware manufactured by other than those manufacturers specifically described or listed in this specification will be considered, providing it is equal in every respect.

B. Quality: All hardware shall be uniform in color, and free from any imperfections affecting serviceability, or marring its appearance.

C. Finish(es): Except where specifically noted, the finishes on the finish hardware shall be as follows:

Satin Stainless Steel US32D

D. Types of Hardware: The numbers listed in the Specification are taken from the catalogs of the following manufacturers, with type of hardware required noted. In each case of the specific size change or lock function requirements, this additional information will be so noted in the Hardware Sets.

2.2 HARDWARE SUPPLIER'S RESPONSIBILITY

A. The finish hardware listed herein shall in no way be construed as a complete hardware schedule and shall be considered as an indication of the finish hardware requirements desired by NJM. It shall be the finish hardware supplier's responsibility to examine the drawings and door schedule, and provide all necessary or additional hardware as required, but not specified herein. Such items of finish hardware shall be of the same type, quality, and quantity as that scheduled for similar doors used for similar purposes in other parts of the building. A schedule of fabrication and delivery shall be executed to avoid any delay of the entire project.

2.3 HARDWARE SET

A. All doors shall be equipped with finish hardware of the types listed and in accordance with the following set number. The Contractor is to refer to the hardware schedule on the Drawings. Set as listed on the drawings shall be supplied as complete units and must include all components. No omissions will be accepted.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Mount Hardware units at heights indicated in "recommended locations for Builders Hardware for Standard Steel Doors and Frames", by the Door and Hardware Institute, except as specifically indicated, required to comply with governing regulations, or may be otherwise directed by the Architect.

B. Install each hardware item in compliance with the manufacturer's instruction and recommendations. Wherever cutting and fitting is required to install finish hardware onto or into surfaces which are later to be painted or finished in another way, coordinate removal,

storage and reinstallation or application of surface protection with finishing work specified in the Division 9 Section. Do not install surface-mounted items until finishes have been completed on the substrate.

C. Set units level, plumb and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.

3.2 ADJUST AND CLEAN

A. Adjust and check each operating item of finish hardware and each door to ensure proper operation or function of every unit. Replace units which cannot be adjusted to operate freely and smoothly as intended for the application made.

B. Final Adjustment: Wherever finish hardware installation is made more than one month prior to acceptance of occupancy of a space or area, return to the work site during the week prior to acceptance or occupancy, and make final check and adjustment of all finish hardware items in such space or area. Clean operating items as necessary to restore proper function and finish of finish hardware and doors. Adjust door control devices to compensate for final operation of heating and ventilating equipment.

C. Instruct Owner's personnel in proper adjustment and maintenance of finish hardware finishes during the final adjustment of finish hardware.

END OF SECTION 08700

SECTION 08815 - MIRRORED GLASS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes safety mirrored glass and associated materials / work.

1.3 DEFINITIONS

A. Deterioration of Mirrored Glass: Defects developed from normal use that are attributable to the manufacturing process and not to causes other than glass breakage and practices for maintaining and cleaning silvered mirrored glass contrary to mirrored glass manufacturer's written instructions. Defects include discoloration, black spots, and clouding of the silver film.

1.4 PERFORMANCE REQUIREMENTS

A. Provide mirrored glass that will not fail under normal usage. Failure includes glass breakage and deterioration attributable to defective manufacture, fabrication, and installation.

1.5 SUBMITTALS

A. Product Data: For the following:

1. Mirrored glass. Include description of materials and process used to produce mirrored glass that indicates source of glass, glass coating components, edge sealer, and quality-control provisions.

2. Mirror mastic.

3. Mirror hardware.

B. Shop Drawings: Include elevations, sections, details, and attachments to other Work.

C. Samples for Verification: For the following products, in sizes indicated below:

1. Mirrored glass, 12 inches square, including edge treatment on 2 adjoining edges.

2. Mirror trim, 12 inches long.

D. Product Certificates: Signed by manufacturers of mirrored glass and mirror mastic certifying that products furnished comply with requirements.

E. Mirror Mastic Glass Coating Compatibility Test Reports: From an organic protective coating manufacturer indicating that mirror mastic has been tested for compatibility and adhesion with organic protective coating applied to silvered mirrored glass. Include organic coating manufacturers' interpretation of test results relative to performance and recommendations for use of mastics with organic protective coating.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer who has completed glazing similar in material, design, and extent to that indicated for this Project; whose work has resulted in mirrored glass installations with a record of successful in-service performance; and who employs glass installers for this Project who are certified under the National Glass Association's Glazier Certification Program as Level 3 (Master Glaziers).

B. Source Limitations for Mirrored Glass: Obtain mirrored glass from one source for each type of mirrored glass indicated.

C. Glazing Publications: Comply with published recommendations in GANA's "Glazing Manual," unless more stringent requirements are indicated. Refer to this publication for definitions of glass and glazing terms not otherwise defined in this Section or in referenced standards.

D. NAAMM's Publication: For silvered mirrored glass, comply with recommendations in NAAMM's "Mirrors, Handle with Extreme Care, Tips for the Professional on the Care and Handling of Mirrors."

E. Safety Glass: Category II materials complying with testing requirements in 16 CFR 1201 and ANSI Z97.1.

F. Preconstruction Mirror Mastic Glass Coating Compatibility Test: Submit mirror mastic products to organic protective coating manufacturer for testing to determine compatibility of adhesive with mirrored glass coating.

1.7 REFERENCES

A. ASTM C 1036 - Standard Specification for Flat Glass.

B. ASTM C 1503 - Standard Specification for Silvered Flat Glass Mirror.

C. Glass Association of North America (GANA) Glazing Manual.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Protect glazing materials according to mirrored glass manufacturer's written instructions and as needed to prevent damage to glass and glazing materials from condensation, temperature changes, direct exposure to sun, or other causes.

B. Comply with mirrored glass manufacturer's written instructions for shipping, storing, and handling mirrored glass as needed to prevent deterioration of silvering, damage to edges, and abrasion of glass surfaces and applied coatings. Store indoors, protected from moisture including condensation.

1.9 PROJECT CONDITIONS

A. Environmental Limitations: Do not install mirrored glass until ambient temperature and humidity conditions are maintained at levels indicated for final occupancy.

1.10 WARRANTY

A. Manufacturer's Special Warranty for Mirrored Glass: Written warranty, made out to Owner and signed by mirrored glass manufacturer agreeing to replace mirrored glass units that deteriorate as defined in "Definitions" Article, f.o.b. the nearest shipping point to Project site, within specified warranty period indicated below:

1. Warranty Period: **Ten (10) years** from date of approved Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

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

1. American Mirror Company, Inc.
2. Carolina Mirror Company.
3. Donisi Mirror Company.
4. Gardner Glass Products.
5. Gilded Mirrors, Inc.
6. Lenoir Mirror Company.
7. Stroupe Mirror Co., Inc.
8. Sunshine Mirror.
9. Virginia Mirror Co., Inc.
10. VVP America, Inc.; Binswanger Mirror Products.
11. Walker Glass Co., Ltd.
12. Or approved equal.

2.2 FLOAT GLASS

A. Tempered Float Glass: ASTM C 1048, Type I (transparent glass, flat), Condition A (uncoated), Kind FT (fully tempered), Quality q3 (glazing select) float glass, complying with the following requirements:

1. Fabrication Process: By horizontal (roller-hearth) process with roll-wave distortion parallel to bottom edge of mirror as installed, unless otherwise indicated.

2. Clear Tempered Float Glass: Class 1 (clear).
   a. Thickness: 1/4".

2.3 MIRRORED GLASS

A. Silvered Mirrored Glass: Tempered, clear float glass with successive layers of chemically deposited silver, electrically or chemically deposited copper, and manufacturer's standard organic protective coating applied to second glass surface to produce a coating system complying with FS DD-M-411.

2.4 FABRICATION

A. Mirrored Glass Sizes: Cut mirrored glass to final sizes and shapes to suit Project conditions.

B. Mirrored Glass Edge Treatment: Treat edges as indicated below.

1. Seal edges of silvered mirrored glass after edge treatment to prevent chemical or atmospheric penetration of glass coating.

2. Require mirrored glass manufacturer to perform edge treatment and sealing in factory immediately after cutting to final sizes.

C. Laminated Safety Glass Mirrors: Provide laminated mirrored glass fabricated to produce units complying with ASTM C 1172, Kind LM, and the following:

1. Glass Lites: Outer lite of mirrored float glass with silvered coating on second surface or pyrolytic coating on first surface and inner lite of clear float glass.

2. Interlayer Material: Mirrored glass manufacturer's standard 0.030-inch-thick, polyvinyl-butyral interlayer with a proven record of showing no tendency to delaminate from, or cause damage to, glass and silvered coating.

3. Laminating Process: Laminate glass using laminator's standard heat-plus-pressure process to produce glass free from foreign substances, air or glass pockets, and other defects.

4. Seal edges of laminated units to comply with written requirements of interlayer manufacturer.

D. Vinyl-Backed Safety Mirrored Glass: Apply vinyl backing with pressure-sensitive adhesive coating over glass coating as recommended by vinyl-backing manufacturer to produce a surface free of bubbles, blisters, and other imperfections. Use adhesives and vinyl backing compatible with mirrored glass as certified by organic coating manufacturer.

2.5 MISCELLANEOUS MATERIALS

A. Setting Blocks: Neoprene, 70 to 90 Shore A hardness.

B. Edge Sealer: Coating compatible with glass coating and approved by mirrored glass manufacturer for use in protecting against silver deterioration at mirrored glass edges.

C. Mirror Mastic: An adhesive setting compound, produced specifically for setting mirrored glass by spot application, certified by both mirrored glass manufacturer and mastic manufacturer as compatible with glass coating and substrates on which mirrored glass will be installed.

1. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   a. Gunther Mirror Mastics.
   b. Palmer Products Corporation.
   c. Or approved equal.

D. Extruded-Aluminum Top and Bottom Trim: J-channels formed with a return deep enough to produce a glazing channel to accommodate mirrored glass units of thickness indicated and in lengths required to cover bottom edge of each mirrored glass unit in a single piece.

1. Bottom Trim: J-channels formed with front leg and back leg not less than 3/8 and 7/8 inch in height, respectively, and a thickness of not less than 0.05 inch.

2. Top Trim: J-channels formed with front leg and back leg not less than 5/8 and 1 inch in height, respectively, and a thickness of not less than 0.062 inch.

3. Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
   a. Bottom Trim:
      1) CRL Standard "J" Channel; C. R. Laurence Co., Inc.
      2) Medium Gauge Aluminum Shallow Nose "J" Moulding Lower Bar; Sommer & Maca Industries, Inc.
      3) Heavy Gauge Aluminum Shallow Nose "J" Moulding Lower Bar; Sommer & Maca Industries, Inc.
      4) Or approved equal.
   b. Top Trim:

1) CRL Deep "J" Channel; C. R. Laurence Co., Inc.
2) Medium Gauge Aluminum Deep Nose "J" Moulding Upper Bar; Sommer & Maca Industries, Inc.
3) Heavy Gauge Aluminum Deep Nose "J" Moulding Lower Bar; Sommer & Maca Industries, Inc.
4) Or approved equal.

E. Fasteners: Fabricated of same basic metal and alloy as fastened metal and matching it in finished color and texture where fasteners are exposed.

F. Anchors and Inserts: Provide devices as required for mirror hardware installation. Provide toothed or lead-shield expansion-bolt devices for drilled-in-place anchors. Provide galvanized anchors and inserts for applications on inside face of exterior walls and where indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, over which mirrored glass units are to be mounted, with Installer present, for compliance with installation tolerances, substrate preparation, and other conditions affecting performance.

1. Verify compatibility with and suitability of substrates, including compatibility of mirror mastic with existing finishes or primers.

2. Proceed with mirrored glass installation only after unsatisfactory conditions have been corrected and surfaces are dry.

3.2 PREPARATION

A. Comply with mastic manufacturer's written installation instructions for preparation of substrates, including coating surfaces with mastic manufacturer's special bond coating where applicable.

3.3 GLAZING

A. General: Install mirrored glass units to comply with written instructions of mirrored glass manufacturer and with referenced GANA and NAAMM publications. Mount mirrored glass accurately in place in a manner that avoids distorting reflected images.

B. Provide space for air circulation between back of mirrored glass units and face of mounting surface.

C. Mastic Spot Installation System: Install mirrored glass units with mastic as follows:

1. Apply barrier coat to mirrored glass backing where approved in writing by manufacturers of mirrored glass and backing material.

2. Apply mastic in spots to comply with mastic manufacturer's written instructions for coverage and to allow air circulation between back of mirrored glass units and face of mounting surface.

3. After mastic is applied, align mirrored glass units and press into place while maintaining a minimum air space of 1/8 inch (3 mm) between back of mirrored glass and mounting surface.

D. For wall-mounted mirrored glass units, install permanent means of support at bottom and top edges with bottom support designed to withstand mirrored glass weight and top support designed to prevent mirrored glass from coming away from wall along top edges.

1. Attach mirror hardware securely to mounting surfaces with mechanical fasteners installed with anchors or inserts as applicable. Install fasteners so heads do not impose point loads on backs of mirrored glass units.

2. For continuous bottom supports, provide setting blocks 1/8 inch by 4 inches long at quarter points. For channels or other continuous supports in which water could be trapped, provide, between setting blocks, two slotted weeps not less than 1/4 inch wide by 3/8 inch long.

3.4 PROTECTION AND CLEANING

A. Protect mirrored glass from breakage and contaminating substances resulting from construction operations.

1. Do not permit edges of silvered mirrored glass to be exposed to standing water.

2. Maintain environmental conditions that will prevent silvered mirrored glass from being exposed to moisture from condensation or other sources for continuous periods of time.

B. Wash mirrored glass not more than four days before date scheduled for inspections intended to establish date for Substantial Completion. Wash mirrored glass by methods recommended in NAAMM publication and in writing by mirrored glass manufacturer. Use water and glass cleaners free from substances capable of damaging mirrored glass edges or coatings.

END OF SECTION 08815

SECTION 09300 - TILE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 DESCRIPTION OF WORK

A. Definition: Tile includes ceramic surfacing units made from clay or other ceramic materials.

B. Extent of tile work is indicated on the drawings and finish schedule.

C. Type of tile work in this section includes the following:

1. Glazed wall tile.
2. Porcelain floor tile.
3. Ceramic base
4. Marble thresholds.

D. Related Sections:

1. Section 03450 - Self-Drying Finishing Underlayment.
2. Section 04200 - Unit Masonry.
3. Section 07900 - Joints Sealer Assemblies.
4. Plumbing Work - Specifications on the Drawings.

1.3 QUALITY ASSURANCE

A. Tile manufacturing standard: ANSI 137.1. Furnish tile complying with Standard Grade requirements unless indicated otherwise.

B. Proprietary Materials: Handle, store, mix and apply proprietary setting and grouting materials in compliance with manufacturer's instructions.

C. Source of Materials: Provide materials obtained from one source for each type and color of tile, grout, and setting materials.

D. Flooring shall comply with ANSI A137.1 American National Standard Specifications for Ceramic Tile, current edition.

E. Installer Qualifications:

1. Installer employs Ceramic Tile Education Foundation Certified Installers for Project.
2. Installer employs factory trained installers for the Project.

F. To ensure warranty requirements and compatibility of products; please provide all tile, grout, setting materials, waterproofing materials, additives, accessories, and factory-prepared dry-set mortars from the same manufacturer.

1.4 SUBMITTALS

A. Product Data: Submit manufacturer's technical information and installation instructions for materials required, except bulk materials.

B. Samples for Initial Selection Purposes: Submit manufacturer's color charts consisting of actual tiles or sections of tile showing full range of colors for each type of tile indicated. Include samples of grout and accessories involving color selection.

C. Samples for Verification Purposes: Submit the following:

1. Samples for each type of tile and for each color and texture required, not less than 12" square, on plywood or hardboard backing and grouted.

2. Full size samples for cove base for each color.

3. 6" long samples of stone thresholds.

4. Samples of metal edge strip.

D. Certification: Furnish Master Grade Certificates for each shipment and type of tile, signed by manufacturer.

E. Slip-Resistant Tile:

1. ASTM E303, Standard Test Method for Measuring Surface Frictional Properties Using the British Pendulum Tester, and has been endorsed by the Ceramic Tile Institute of America (CTIOA) for all types of flooring since 2001.

2. Submit manufacturer’s test data for slip-resistant tile. Tests shall be in conformance with indicated applicable codes and regulations.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use. Prevent damage or contamination to materials by water, freezing, foreign matter or other causes.

B. Deliver and store materials on-site at least 24 hours before work begins.

C. Provide heated and dry storage facilities on-site.

1.6 PROJECT CONDITIONS

A. Maintain continuous and uniform building temperatures of not less than 10°C (50°F) during installation.

B. Ventilate spaces receiving tile in accordance with material manufacturer's instructions.

1.7 MAINTENANCE MATERIALS

A. Furnish extra materials that match and are from the same production runs as products

installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Tile and Trim Units: Furnish quantity of full-size units equal to 3% of amount installed for each type, composition, color, pattern and size indicated.

2. Grout: Furnish quantity of grout equal to 3% of amount installed for each type, composition, color indicated.

1.8 WARRANTY

A. Limited Warranty:

1. Manufacturer warrants that manufactured products will be free from defect for a period of **one (1) year** from date of purchase.
   a. Defect is defined as a shortfall in the product to perform to manufacturer's specifications as disclosed in product literature, within industry allowable tolerances as set forth in standard, national industry protocols.
   b. Manufacturer provides detailed information in its product literature regarding appropriate tile and stone applications. Failure to comply with recommended applications voids this warranty.
   c. This one-year express warranty is the sole warranty extended and replaces any statutory warranties to the maximum extent allowable by law.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Subject to compliance with requirements, manufacturers offering products which may be incorporated in the work include, but are not limited to, the following:

1. Manufacturer of Glazed Wall Tile:
   a. Basis of Design: Daltile Corp.
   b. Subject to compliance with requirements, manufacturers offering products which may be incorporated in the work include but are not limited to the following:
      1) Crossville, Inc.
      2) Summitville Tiles, Inc.
      3) American Olean Tile Co., Inc.
      4) Nemo Tile Co.
      5) Or approved equal.

2. Manufacturers of Porcelain Floor Tile:
   a. Basis of Design: Crossville, Inc.
   b. Subject to compliance with requirements, manufacturers offering products which may be incorporated in the work include but are not limited to the following:
      1) Daltile Corp.
      2) Or approved equal.

2.2 TILE PRODUCTS

A. Glazed Wall Tile: Provide flat tile complying with the following requirements:

1. Basis of Design: Provide “Linear - Color Wheel Collection” as manufactured by Daltile Corp. to comply with the following:
    a. Nominal Facial Dimensions: 4-1/4" x 8-9/16".
    b. Nominal Thickness: 5/16".
    c. Face: Plain with cushion edge.
    d. Colors in indicated pattern - Refer to Drawings:
        1) CT2: Matte Arctic White #0709,
        2) CT3: Matte Desert Gray #X714
        3) CT4: Matte Chalkboard #0780

B. Porcelain Floor Tile:

1. Basis of Design: Provide “Color Blox 2.0”, as manufactured by Crossville Inc., to comply with following:
    a. Provide: 12" x 12" x 3/8" thick, nominal.
    b. Color / Finish:
        1) FT1: Slinky, UPS - Unpolished with Cross Sheen Finish®.
    c. SKU: CBX03.11212UPS.
    d. Refer to drawings.

C. Glazed Tile Base:

1. Basis of Design: Provide “Linear - Color Wheel Collection” as manufactured by Daltile Corp. to comply with the following:
    a. Nominal Facial Dimensions: 4-1/4" x 12-7/8".
    b. Nominal Thickness: 5/16".
    c. Face: Plain with cushion edge.
    d. Color:
        1) TB1: Matte Arctic White #0709.
    e. Refer to drawings.

2.3 THRESHOLDS

A. Stone Thresholds: Provide sound Group "A" marble threshold of profile indicated with an abrasive hardness of not less than 10.0 when tested in accordance with ASTM C 241. Maximum height ½" above finished floor. Furnish white marble for thresholds, unless otherwise indicated.

2.4 COLORS AND PATTERNS

A. As indicated in this Specification and on Drawing A402.

2.5 SETTING MATERIAL

A. Lightweight One-Step, Polymer Fortified Mortar:

1. Basis of Design: “Ultraflex LFT”, as manufactured by Mapei Corp.
    a. The ultimate, lightweight one-step, polymer fortified, large and heavy tile mortar for interior installation of ceramic tile, porcelain tile, and stone.
    b. Product features maximum non-sag performance on walls and maximum buildup of up to ¾" (19 mm) without shrinkage on floors.
    c. Product is free of silica sand and has a smooth, lightweight, easy-to trowel

consistency and a long open time for ease of installation.

d. The robust formula is fiber-reinforced for maximum strength and durability, exceeding ANSI A118.15 requirements. Product utilizes the basis of design manufacturer's hydromatic cure chemistry. This technology accelerates the hydration process to rapidly consume the water in the system, allowing the material to cure in a predictable manner.

e. Warranty: **Twenty-five (25) Year** System Warranty.

2. Products offered by manufacturers to comply with requirements include the following:
   a. MULTIMAX LITE", as manufactured by Laticrete International, Inc.
   b. Or approved equal.

2.6 GROUT MATERIAL

A. Portland Cement Mortar Installation Materials: Provide materials to comply with ANSI Standards as required for installation method designated, unless otherwise indicated.

B. Basis of Design: "Ultracolor Plus Max", as manufactured by Mapei.

1. Rapid-Setting Grout: Ultracolor Plus Max is an ultra premium, fast-setting, polymer-modified, nonshrinking grout that offers rich and vibrant colors with maximized color depth and color consistency.
   a. This fine-aggregate grout can be used for joint widths from 1/16" to 3/4" (1.5 mm to 19 mm).
   b. Ultracolor Plus Max includes DropEffect™ technology for reduced surface absorption, helping to repel water, dirt and grime from penetrating grout joints.
   c. It is also specially formulated with MAPEI's High-Hydrated Cement Technology (HCT™) to provide advantages over traditional grout, such as eliminating efflorescence and increasing stain resistance. .

2. Industry Standards and Approvals:
   a. ISO 13007: Classification CG2WAF.
   b. ANSI: Meets or exceeds A118.6 and A118.7 industry standards.
   c. ASTM G21: Meets or exceeds the standard for mold and mildew resistance.

C. Grout and Caulk Colors:

1. Wall Tile and Base: Eggshell #5220.
2. Floor Tile: Silver #5027.

2.7 MISCELLANEOUS MATERIALS

A. Tile Cleaner: Product specifically acceptable to manufacturer of tile and grout manufacturer for application indicated and as recommended by National Tile Promotion Federation, 112 North Alfred St., Alexandria, VA 22134 or Ceramic Tile Institute, 700 N. Virgil Ave., Los Angeles, CA 90029. Provide a neutral cleaner capable of removing soil and residue without harming tile and grout surfaces, specifically approved for materials and installations indicated by tile and grout manufacturers.

B. Grout and Tile Sealer: Manufacturer's standard product for sealing tile and grout joints that does not change color or appearance of grout.

1. Provide colorless and stain resistant penetrating sealer with Ph factor between 7 and 10, that does not affect color or physical properties of tile surfaces.

2. Products:
   a. Custom Building Products; Surfaceguard Tile and Grout Sealer.
   b. Summitville Tiles, Inc.; SL-15, Invisible Seal Penetrating Grout and Tile Sealer.
   c. Or approved equal.

3. Apply grout sealer to cementitious grout joints according to grout-sealer manufacturer's written instructions. As soon as grout sealer has penetrated grout joints, remove excess sealer and sealer from tile faces by wiping with soft cloth.

C. Waterproofing:

1. Basis of Design; "Mapelastic", as manufactured by Mapei.
   a. Mapelastic is a two-component cementitious membrane that waterproofs concrete and masonry. It also offers protection against chemical attack from de-icing salts, sulfates, chlorides and carbon dioxide.

2. Mapelastic's specially formulated synthetic resins generate a hardened layer that remains flexible under all environmental conditions. The dried mortar remains waterproof up to 50 feet (positive side) of hydrostatic head pressure and resists chemical attack from de-icing salts, sulfates, chlorides and carbon dioxide.

3. Outstanding bond to horizontal and vertical concrete, masonry and ceramic surfaces
   a. Available in silver (light gray) and white.

4. Remains highly flexible under all environmental conditions.

5. Mapelastic is carefully engineered to fully cover hairline and micro cracks evident in placed concrete, and to allow adequate flexibility so that cracks up to 1/32" (1 mm) may be bridged. This specific product engineering ensures that Mapelastic will not conceal structural cracks that develop in concrete structures.

D. Waterproofing / Crack Isolation Membrane at Porcelain Tile installation:

1. Basis of Design: "Hydroban®" as manufactured Laticrete International, Inc.; or approved equal.

2. Single component self-curing liquid rubber polymer that forms a flexible, seamless waterproofing membrane.
   a. Exceeds ANSI A118.10 and A118.12.
   b. Contains antimicrobial product protection.

E. Leveling and Patching Compounds: Latex types as recommended by flooring manufacturer.

F. Finishing & Edge Protection Profiles:

1. Basis of Design: "ECK-E, E37 V2A E 80" as manufactured by Schluter Systems; or approved equal.
   a. Stainless Steel finishing and edge-protection profile for tiled edges.

2. Basis of Design: “SCHIENE, E37 V2A E 10", as manufactured by Schluter Systems; or approved equal.
    a. Stainless Steel finishing and edge-protection profile for tiled edges.

PART 3 - EXECUTION

3.1 TILE INSTALLATION STANDARDS

A. ANSI Tile Installation Standard: Comply with applicable parts of ANSI 108 series of tile installation standards included under "American National Standard Specifications for installation of ceramic tile.

B. TCNA Installation Guidelines: TCNA "Handbook for Ceramic Tile Installation (latest edition)"; comply with TCNA installation methods indicated or, if not otherwise indicated, as applicable to installation conditions shown.

C. Comply with manufacturer's instructions for mixing and installation of proprietary materials.

3.2 INSTALLATION

A. Comply with TCNA's "Handbook for Ceramic, Glass, and Stone Tile Installation" for TCNA installation methods specified in tile installation schedules. Comply with parts of the ANSI A108 series "Specifications for Installation of Ceramic Tile" that are referenced in TCNA installation methods, specified in tile installation schedules, and apply to types of setting and grouting materials used.

1. For the following installations, follow procedures in the ANSI A108 series of tile installation standards for providing 95 percent mortar coverage:
    a. Tile floors in wet areas.
    b. Tile floors consisting of tiles 8 by 8 inches (200 by 200 mm) or larger.
    c. Tile floors consisting of rib-backed tiles.

B. Surface Preparation:

1. All surfaces should be between 40°F (4°C) and 90°F (32°C) and structurally sound, clean and free of all dirt, oil, grease, paint, concrete sealers or curing compounds.

2. Rough or uneven concrete surfaces should be made smooth with a latex fortified underlayment or leveling mortar to provide a proper finish.

3. Dry, dusty concrete slabs or masonry should be dampened and excess water swept off.

4. Installation may be made on a damp surface.

5. All slabs must be plumb and true to within 1/4" (6 mm) in 10 ft (3 m).

7. Expansion joints shall be provided through the tile work from all construction or expansion joints in the substrate. Follow ANSI specification A108.01–3.7 "Requirements For Movement Joints: Preparations by Other Trades" or TCNA detail EJ-171 "Movement Joints—Vertical & Horizontal". Do not cover expansion joints with mortar.

C. Extend tile work into recesses and under or behind equipment and fixtures, to form a complete covering without interruptions, except as otherwise shown. Terminate work neatly at obstructions, edges and corners without disrupting pattern or joint alignments.

D. Accurately form intersections and returns. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish or built-in items for straight aligned joints. Fit tile closely to electrical outlets, piping, fixtures and other penetrations so that plates, collars, or covers overlap tile.

E. Provide manufacturer's standard trim shapes where necessary to eliminate exposed tile edges.

F. Set marble thresholds in same type of setting bed as field tile, unless otherwise indicated.

G. Jointing Pattern: Unless otherwise shown, lay tile in grid pattern. Align joints when adjoining tiles on floor, base, walls and trim are same size. Layout tile work and center tile fields in both directions in each space or on each wall area. Adjust to minimize tile cutting. Provide uniform joint widths, unless otherwise shown.

H. Expansion Joints: Locate expansion joints and other sealant filled joints, including control, contraction and isolation joints, where indicated or where joints occur in substrate. Do not saw cut joints.

I. Grout tile to comply with the referenced standards, using grout material as indicated.

J. Joint Widths: Unless otherwise indicated, install tile with the following joint widths:

1. Glazed Wall Tile: 1/16 inch (1.6 mm).
2. Porcelain Floor Tile: 1/4 inch (6.4 mm).

K. Movement Joints (EJ171):

1. Perimeter and field movement joints within a tile installation are essential and required.

2. Location and Frequency:
   a. Interior: 20' to 25' in each direction.
   b. Interior tile work exposed to direct sunlight or moisture: 8' to 12' in each direction.
   c. Above-ground concrete slab substrate: 8' to 12' in each direction.
   d. Perimeter Joints: Movement joints are required where tile work abuts restraining surfaces such as perimeter walls, dissimilar floor, curbs, columns, pipes, ceilings, and where changes occur in backing materials, but not at drain strainers.
   e. All expansion, control, construction, cold-saw, isolation, contraction, and seismic joints in the structure should continue through the tile work, including such joints at vertical surfaces.
      1) If proprietary crack isolation membrane is specified over saw cut joints to relocate a movement joint, contrary to EJ-171, the tile contractor is not responsible for cracking in grout joints or tile where tile has been installed over any such relocated movement joints, provided the tile, membrane, and other materials are installed correctly; this includes curling and/or deformation of the concrete occurring after installation of the membrane.
      2) Where tile pattern falls diagonally across a saw-cut joint, relocation of the movement joint is specifically not recommended because of the reduced

performance of the sealant when used in a saw tooth or other non-linear fashion.

3. Joint Width:
   a. Interior for paver tile: Same as grout joint, but not less than 1/4".
   b. Interior for ceramic glazed wall tile: Preferred not less than 1/4", but never less than 1/8".
   c. Joints in tile and setting materials shall never be less than the width of the saw-cut control joint width.
   d. Joints through tile work directly over structural joints must never be narrower than the structural joint.

4. Materials:
   a. Backup strip shall be a flexible and compressible type of closed-cell foam polyethylene, butyl rubber, or open cell and closed sell polyurethane, rounded at surface to contact sealant, as shown in details, and as recommended by sealant manufacturers. It mus fit neatly into the joint without compacting and to such a height to allow a sealant depth of ½ the width of the joint. Sealant **must not** bond to the backup material.
   b. Suitable sealants include silicone, urethane, and polysulfide. Sealants are available in both single- and multicomponent formulations.

3.3 FLOOR INSTALLATION METHODS

A. Porcelain Tile: Install tile to comply with requirements indicated below for setting bed method, TCNA installation method related to type of subfloor construction, and grout type and in accordance with applicable ANSI installation specifications:

1. Concrete Subfloor, Interior, slab on grade or above-ground: TCNA F112 (bonded).
   a. Mortar: Latex portland cement; ANSI A118.4 or better or ISO C2 or better.
   b. Grout: Epoxy; ANSI A118.3 or ISO RG.

2. Elevated concrete slabs or where indicated: TCNA F122A, thin set, with membrane.
   a. Mortar: Latex portland cement; ANSI A118.4 or better or ISO C2S1 or better unless ANSI A118.1 or ISO C1 is recommended by membrane manufacturer. Must also be recommended by manufacturer for above-ground use.
   b. Grout: Epoxy; ANSI A118.3 or ISO RG.
   c. Waterproof Membrane: ANSI A108.13 or manufacturer's directions. Comply with plumbing and building codes.

3.4 WALL TILE INSTALLATION METHODS

A. Install types of tile designated for wall application to comply with requirements indicated below for setting bed methods, TCNA installation methods related to subsurface wall conditions, and grout types and in accordance with applicable ANSI installation specifications:

1. Masonry or Concrete, Interior: TCNA W202I.
   a. Mortar: Latex portland cement; ANSI 118.4 or better or ISO C2 or better.
   b. Grout: Latex portland cement; ANSI 118.6 or better or ISO CG1 or better.

2. Gypsum Board, Interior: TCNA W242.
    a. Organic Adhesive; ANSI 136.1 (Type I or II) or ISO D1 or better.
    b. Grout: Latex portland cement; ANSI 118.6 or better o ISO CG1 or better.

3.5 CLEANING AND PROTECTION

A. Cleaning: Upon completion of placement and grouting, clean all ceramic tile surfaces so they are free of foreign matter.

B. Finished Tile Work: Leave finished installation clean and free of cracked, chipped, broken, unbonded, or otherwise defective tile work.

C. Protection: When recommended by tile manufacturer, apply a protective coat of neutral protective cleaner to completed tile walls and floors. Protect installed tile work with kraft paper or other heavy covering during construction period to prevent staining, damage and wear.

1. Prohibit foot and wheel traffic from using tiled floors for at least 7 days after grouting is completed.

2. Before final inspection, remove protective coverings and rinse neutral cleaner from tile surfaces.

END OF SECTION 09300

SECTION 09510 - ACOUSTICAL CEILINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Extent of type of acoustical ceiling is shown and scheduled on the drawings.

B. Type of acoustical ceilings specified in this section includes the following:

1. Lay in acoustical ceiling board, exposed suspension system.

1.3 QUALITY ASSURANCE

A. Installer: Firm with a recommended three years of successful experience in installation of acoustical ceilings similar to requirements for this project and which is acceptable to manufacturer of acoustical units, as shown by current written statement from manufacturer.

B. Fire Resistance Ratings: As indicated by reference to design designation in UL "Fire Resistance Directory" for floor, roof or beam assemblies in which acoustical ceilings function as a fire protective membrane; tested per ASTM E 119. Provide protection materials for lighting fixtures and air ducts to comply with requirements indicated for rated assembly.

C. Surface Burning Characteristics: As follows, tested per ASTM E 84.

1. Flame Spread: 25 or less.
2. Smoke Developed: 50 or less.

D. All acoustical ceilings shall be installed to conform to the requirements of International Building Code for Category C and the recommendation of the Ceiling and Interior Systems Construction Association (CISCA) for Zone 2 seismic design and comply with installation requirements for areas subject to light to moderate seismic activity.

E. General Contractor shall provide adequate ventilation and humidity control before, during and after ceiling installation to prevent damage (sagging, etc.) to ceilings prior to Owner's acceptance of the Work.

F. Warranty:

1. Provide manufacturer’s special project warranty against sagging or warping of acoustic ceiling boards for a minimum period of **thirty (30) years** which starts on approved date of substantial completion.

G. Acoustical Ceiling Board type and Suspended Grid System type shall be by a single manufacturer.

1.4 SUBMITTALS

A. Product Data: Submit manufacturer's technical data for type of acoustical ceiling unit and suspension system required including certified test reports to show compliance with requirements of these specifications.

1. Include manufacturer's recommendations for cleaning and refinishing acoustical units, including precautions against materials and methods which may be detrimental to finishes and acoustical performance.

B. Samples: Submit manufacturer's standard size samples of acoustical unit, but not less than 6" square, and of exposed ceiling suspension members including wall and special moldings. Provide sample s showing the selected color (Flat White #050), texture for type of component required.

C. Shop Drawings: Submit shop drawings for acoustical ceilings, including layout of system components and details of connections between elements of system and between system and other building components.

1. **Contractor must provide shop drawings certifying that attachment devices meet specified loads. Contractor must coordinate with all Subcontractors for fixture loads, etc.**

D. Testing Reports: Submit testing reports which indicate compliance with indicated requirements.

E. Deliver extra materials to Owner. Furnish extra materials described below matching products installed, packaged with protective covering for storage and identified with appropriate labels.

1. Acoustical Ceiling Units: Furnish quantity of full size units equal to 2.0% (rounded up to the nearest full carton) of type of acoustic unit installed.

2. Exposed Suspension System Components: Furnish quantity of each exposed component equal to 2.0% (rounded up to the nearest full carton) of type suspension component installed.

1.5 PROJECT CONDITIONS

A. Space Enclosure: Do not install interior acoustical ceilings until space is enclosed, wet-work in space is completed and nominally dry, work above ceilings is complete and ambient conditions of temperature and humidity will be continuously maintained at values near those indicated for final occupancy.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis of Design: Provide Acoustical Ceiling Board (AACB) and Metal Suspension System as manufactured by United States Gypsum Co. (USG).

B. Acoustical Ceiling Tile and Grid system products specified herein have been selected because of their quality of construction, configuration, design, function, available finishes, components, accessories, dimensions, shape and style.

2.2 ACOUSTICAL CEILING BOARDS

A. Refer to reflected ceiling plans for size and locations.

B. Where AACB is indicated: Provide USG Mars Climaplus Performance Acoustical Panels, Model #86985, 24" x 24" x 3/4" thick, FLB Edge, NRC 0.75, CAC 35, Light Reflectance 0.90, Washable/ Scrubbable Finish, Sag Resistance, Greenguard Gold Certified, Color - White.

2.3 METAL SUSPENSION SYSTEMS, GENERAL

A. Standard for Metal Suspension System: Provide metal suspension system of type, structural classification and finish indicated which comply with applicable ASTM C 635 requirements.

B. Finish and Color: Provide manufacturer's standard factory-applied finish for type of system indicated. For exposed suspension members and accessories with painted finish, Color - Flat White #050.

C. Attachment Devices: Size for 5 times design load indicated in ASTM C 635, Table 1, Direct Hung.

D. Concrete Inserts: Inserts formed from hot-dipped galvanized sheet steel and designed for attachment to concrete forms and for embedment in concrete, with holes or loops for attachment at hanger wires.

E. Hanger Wire: Galvanized carbon steel wire, ASTM A 641, soft temper, prestretched, Class 1coating, sized so that stress at 3-times hanger design load (ASTM C 635, Table 1, Direct Hung), will be less than yield stress of wire, but provide not less than 12gage (0.106").

F. Type of System: Either direct-hung or indirect-hung suspension system, at Contractor's option.

1. Carrying Channels: 1-1/2 inch steel channels, hot-rolled or cold-rolled, not less than 0.475 lbs. per lineal foot.

G. Edge Moldings and Trim: Metal types and profiles indicated or, if not indicated, provide manufacturer's standard molding for edges and penetrations of ceiling which fits with type of edge detail and suspension system indicated. Provide 7/8" edge at wall angle and reveal edges.

H. Hold-Down Clips: For interior ceilings composed of lay-in panels weighing less than 1 lb. per sq. ft., or where indicated, provide hold-down clips spaced 2'-0" o.c. on all cross tees.

2.4 EXPOSED METAL SUSPENSION SYSTEMS

A. Double Web Steel Suspension System: For use where AACB ceilings are indicated. Manufacturer's standard system roll-formed from prefinished hot dipped galvanized steel with 15/16" wide exposed faces on flanges of structural members; other characteristics as follows:

1. Structural Classification: Intermediate-Duty System.

2. Finish: Color - Flat White #050.

3. Provide USG “Donn Brand Centricitee DXT / DXLT Acoustical Suspension System.
   a. 9/16" exposed grid.

4. Provide USG “Donn Brand M7 Overlapping Wall Angle.
   a. Color - Flat White #050.

2.5 MISCELLANEOUS MATERIALS

A Acoustical Sealant: Resilient, non-staining, non-shrinking, non-hardening, non-skinning, non-drying, non-sag sealant intended for interior sealing of concealed construction joints.

PART 3 - EXECUTION

3.1 INSPECTION

A. Examine conditions under which acoustical ceiling work is to be performed and notify Architect in writing of unsatisfactory conditions. Do not proceed with work until unsatisfactory conditions have been corrected in an acceptable manner.

3.2 PREPARATION

A. Coordination: Furnish layouts for inserts, clips, or other supports required to be installed by other trades for support of acoustical ceilings.

B. Measure each ceiling area and establish layout of acoustical units to balance border widths at opposite edges of each ceiling. Avoid use of less-than-half width units at borders, and comply with reflected ceiling plans wherever possible.

3.3 INSTALLATION

A. General: Install materials in accordance with manufacturer's printed instructions, and to comply with governing regulations, fire-resistance rating requirements as indicated, and CISCA standards applicable to work.

B. Arrange acoustical units and orient directionally-patterned units (if any) in manner shown by reflected ceiling plans.

   1. Install tile with pattern running in one direction, unless otherwise indicated.

C. Install suspension systems to comply with ASTM C 636, with hangers supported only from building structural members. Locate hangers not less than 6" from each end and spaced 4'-0" along each carrying channel or direct-hung runner, unless otherwise indicated, leveling to tolerance of 1/8" in 12'-0".

   1. Secure wire hangers by looping and wire-tying, either directly to structures or to inserts, eye-screws, or other devices which are secure and appropriate for substrate, and which will not deteriorate or fail with age or elevated temperatures.

D. Install edge moldings of type indicated at perimeter of acoustical ceiling area and at locations where necessary to conceal edges of acoustical units.

   1. Sealant Bed: Apply continuous ribbon of acoustical sealant, concealed on back of vertical leg before installing moldings.

2. Screw-attach moldings to substrate at intervals not over 16" o.c. and not more than 3" from ends, leveling with ceiling suspension system to tolerance of 1/8" in 12'-0". Miter corners accurately and connect securely.

3. Install acoustical panels in coordination with suspension system, with edges concealed by support of suspension members. Scribe and cut panels to fit accurately at borders and at penetrations.

4. Install hold-down clips in areas indicated, and in areas where required by governing regulations or for fire-resistance ratings; space as recommended by panel manufacturer, unless otherwise indicated or required.

E. Cooperate with other trades and Contracts for installation of their materials and equipment, particularly with those installing the ductwork, ceiling diffusers and lighting fixtures so that diffusers, lighting fixtures and other items are located on center lines of tile or on centers of joints as shown on approved shop drawings.

1. Provide additional hanger wires to support cubicle curtain tracks, and other superimposed loads. Locate the supplemental hangers within 6 inches of each corner of the item being supported.

2. Where light fixtures, or other recessed items occur in ceilings, frame acoustical material properly to permit installation of such recessed items and do all necessary cutting and fitting of acoustical materials and suspension systems to accommodate same. Cut neatly around all pipes passing through ceilings. Build in fixture frames and yokes in cooperation with Electrical Contractor.

3.4 CLEANING

A. Clean exposed surfaces of acoustical ceilings, including trim, edge moldings, and suspension members; comply with manufacturer's instructions for cleaning and touch-up of minor finish damage. Remove and replace work which cannot be successfully cleaned and repaired to permanently eliminate evidence of damage. General Contractor is responsible for cleaning or replacement of all damaged tile, regardless of how the damage was caused and regardless of by which Contractor.

END OF SECTION 09510

SECTION 09900 - PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 DESCRIPTION OF WORK

A. Extent of painting work is indicated on Drawings and Room Finish Schedule.

B. Work includes painting and finishing of existing interior hollow metal doors and frames, as indicated.

C. "Paint" as used herein means all coating systems materials, including primers, enamels, and other applied materials whether used as prime, intermediate or finish coats.

D. Surfaces to be Painted: Paint existing exposed surfaces of colors to match the existing color(s). If color or finish is not designated, Architect will select these from standard and special colors.

1.3 QUALITY ASSURANCE

A. Single Source Responsibility: Provide primers and other undercoat paint produced by same manufacturer as finish coats. Use only thinners approved by paint manufacturer, and use only within recommended limits.

B. Coordination of Work: Review other sections of these specifications in which prime paints are to be provided to ensure compatibility of total coatings system for various substrates. Upon request from other trades, furnish information or characteristics of finish materials provided for use, to ensure compatible prime coats are used.

C. Industry Standards: Comply with industry standard established by the Painting and Decorating Contractors of America PDCA for applications, methods and recommendations and use of tools and equipment for paint coatings.

D. Lead and Chromate Contents: All paint products must be free of any lead or chromate contents.

E. Volatile Organic Compound Compliant (VOC.):

1. All paint products must meet the State VOC environmental regulations (OTC Regulation compliant) and the following:
    a. Chemical Components of Interior Paints and Coatings: Provide products that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24) and the following chemical restrictions:
        (1) Primer, Sealer and Undercoater: VOC content of not more than 200 g/L.
        (2) Specialty Primer, Sealer and Undercoater: VOC content of not more than 350 g/L.
        (3) Rust Preventative Coating: VOC content of not more than 400 g/L.

(4) Flat Paints and Coatings: VOC content of not more than 100 g/L.
(5) Non-Flat Paints and Coatings: VOC content of not more than 150 g/L.
(6) Nonflat High Gloss Coatings: VOC content of not more than 250 g/L.
(7) Aromatic Compounds: Paints and coatings shall not contain more than 1.0 percent by weight of total aromatic compounds (hydrocarbon compounds containing one or more benzene rings).

G. Paint Coordination: Provide finish coats which are compatible with prime paints used. Review other sections of these specifications in which prime paints are to be provided to ensure compatibility of total coatings system for various substrates. Upon request from other trades, furnish information on characteristics of finish materials proposed for use, to ensure compatible prime coats are used. Provide barrier coats over incompatible primers or remove and reprime as required. Notify Architect in writing of any anticipated problems using specified coating systems with substrates primed by others.

1.4 SUBMITTALS

A. Product Data: Submit manufacturer's technical information including paint label analysis and application instructions for each material proposed for use.

B. Samples: Prior to beginning work, Contractor shall furnish color chips (2 fan decks) for surfaces to be painted. Use representative colors when preparing samples for review. Submit samples for Architect's review of color and texture only. Provide a listing of material and application for each coat of each finish sample.

1. On 12" x 12" hardboard, provide two samples of each color and material, with texture to simulate actual conditions. Resubmit samples as requested by Architect until acceptable sheen, color, and texture is achieved.

C. Acknowledgment of Contract Documents: Contractor / Installer shall submit to the Architect certifications signed by each of the Contractor and Installer attesting acknowledgment of requirements of the Contract Documents for specific project requirements indicated in this specifications.

1. Installer shall submit proof of evidence, (this project specification section) with his/her letter of certificate.

2. Contractor / Installer shall not proceed with painting work of this section until submittal of required certifications are completed.

3. Any work performed prior to completion of this submittal shall be subject to total rejection by the Architect. All rejected work shall be rectified without any additional cost to the Owner.

E. Coating Maintenance Manual: Upon conclusion of the project, the Contractor in conjunction with the coating manufacturer shall furnish a coating maintenance manual such as the Sherwin-Williams " Custodian Project Color and Product Information" report or equal. Manual shall include an area summary with finish schedule, area detail designating where each product/color/finish was used, product data pages, SDS pages, care and cleaning instructions, touch up procedures and color samples of each color and finish used.

1.5 DELIVERY AND STORAGE

A. Deliver materials to job site in original, new and unopened packages and containers bearing manufacturer's name and label, and following information:

1. Name or title of material.
2. Fed. Spec. number, if applicable.
3. Manufacturer's stock number and date of manufacturer.
4. Manufacturer's name.
5. Contents by volume, for major pigment and vehicle constituents.
6. Thinning instructions.
7. Application instructions.
8. Color name and number.

1.6 JOB CONDITIONS

A. Apply solvent-thinned paints only when temperature of surfaces to be painted and surrounding air temperatures are between 45°F (7°C) and 95°F (35°C), unless otherwise permitted by paint manufacturer's printed instructions.

B. Do not apply paint when relative humidity exceeds 85%, or to damp or wet surfaces, unless otherwise permitted by paint manufacturer's printed instructions.

C. Provide sufficient temporary illumination producing overall space/room minimum illumination level of 50 ft. candles while preparing or painting of surfaces and to assure the production of quality finishes.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Subject to compliance with requirements, manufacturers offering products which may be incorporated in the work include but are not limited to the following:

1. M A B
2. Benjamin Moore
3. PPG Architectural Coatings
4. The Sherwin-Williams Company
5. Linetec Inc.
6. Or approved equal

2.2 COLORS AND FINISHES

A. Prior to beginning work, Contractor shall furnish color chips for surfaces to be painted from manufacturers full line of products. This shall include custom colors.

1. Contractor shall allow for split frames at all existing hollow metal door frames to be painted.

2. Final acceptance of colors will be from samples supplied on the job.

B. Color Pigments: Pure, non-fading, applicable types to suit substrates and service indicated.

2.3 MATERIALS

A. Material Quality: Provide best quality grade of various types of coatings as regularly manufactured by acceptable paint materials manufacturers. Materials not displaying manufacturer's identification as a standard, best-grade product will not be acceptable.

B. Provide undercoat paint recommended and produced by the same manufacturer as the finish coats. Use only thinners approved by the paint manufacturer, and use only within recommended limits.

2.4 INTERIOR PAINT SCHEDULE

A. Semi-Gloss (Satin) Enamel:

1. 1st Coat: Sherwin-Williams, Pro Industrial Pro-Cryl Universal Primer.

2. 2nd Coat: Acrylic Enamel, Sherwin-Williams, Pro Industrial HP Acrylic.

3. 3rd Coat: Acrylic Enamel, Sherwin-Williams, Pro Industrial HP Acrylic.

4. Apply to following interior surfaces: Hollow metal doors and door frames.

5. Apply as many coats as necessary to produce a uniform substrate and finish appearance.

2.5 EXTRA STOCK

A. Contractor shall provide one gallon of extra stock for each color/type selected for use on the project. Provide unopened containers clearly marked with manufacturers color number and name.

PART 3 - EXECUTION

3.1 INSPECTION

A. Applicator must examine areas and conditions under which painting work is to be applied and notify Contractor in writing of conditions detrimental to proper and timely completion of work. Do not proceed with work until unsatisfactory conditions, included rotted or otherwise defective materials, have been observed by all concerned and corrected in a manner acceptable to Applicator.

B. Starting of painting work will be construed as Applicator's acceptance of surfaces and conditions within any particular area.

C. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions otherwise detrimental to formation of a durable paint film.

3.2 SURFACE PREPARATION

A. General:

1. Perform preparation and cleaning procedures in accordance with paint manufacturer's instructions and as herein specified, for each particular substrate condition.

2. Provide barrier coats over incompatible primers or remove and reprime as required. Notify Architect in writing of any anticipated problems in using the specified coating systems with substrates primed by others.

3. Remove hardware, hardware accessories, machined surfaces, plates, and similar items in place and not to be finish-painted, or provide surface-applied protection prior to surface preparation and painting operations. Remove, if necessary, for complete painting of items and adjacent surfaces. Following completion of painting of each space or area, reinstall removed items.

4. Clean surfaces to be painted before applying paint or surface treatments. Remove oil and grease prior to mechanical cleaning. Program cleaning and painting so that contaminants from cleaning process will not fall onto wet, newly-painted surfaces.

B. Ferrous Metals:

1. Clean ferrous surfaces, which are not galvanized or shop-coated, of oil, grease, dirt, loose mill scale and other foreign substances by solvent or mechanical cleaning.

2. Touch-up shop-applied prime coats wherever damaged or bare, where required. Clean and touch-up with same type shop primer.

3.3 MATERIALS PREPARATION

A. Mix and prepare painting materials in accordance with manufacturer's directions.

B. Maintain containers used in mixing and application of paint in a clean condition, free of foreign materials and residue.

C. Stir materials before application to produce a mixture of uniform density, and stir as required during application. Do not stir surface film into material. Remove film and, if necessary, strain material before using.

3.4 APPLICATION

A. General: Apply paint in accordance with manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied.

B. Paint from corner to corner or to a major change in direction of surface to be painted. Provide crisp, clean, sharp lines where new painted surfaces abut existing painted surfaces.

C. **Apply additional coats when undercoats, stains or other conditions show through final coat of paint, until paint film is of uniform finish, color and appearance. Give special attention to insure that surfaces, including edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.**

D. Sand lightly between each succeeding enamel coat.

E. Scheduling Painting: Apply first-coat material to surfaces that have been cleaned, pretreated or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.

F. Allow sufficient time between successive coatings to permit proper drying. Do not recoat until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and application of another coat of paint does not cause lifting or loss of adhesion of the undercoat.

G. **Minimum Coating Thickness: Apply materials at not less than manufacturer's recommended spreading rate, to establish a total dry film thickness as recommended by coating manufacturer and an acceptable finished appearance in finish, color and appearance as determined by the Architect.**

H. Primer Coat: Apply primer coat of material which is required to be painted, and which has not been prime coated by others.

1. Re-coat primed and sealed surfaces where there is evidence of suction spots or unsealed areas in first coat, to assure a finish coat with no burn-through or other defects due to insufficient sealing.

I. Pigmented (Opaque) Finishes: Completely cover to provide an opaque, smooth surface of uniform finish, color, appearance and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness or other surface imperfections will not be acceptable.

J. Completed Work: Match approved samples for color, texture and coverage. Remove, refinish or repaint work not in compliance with specified requirements.

3.5 CLEAN-UP AND PROTECTION

A. Clean-Up: During progress of work, remove from site discarded paint materials, rubbish, cans and rags at end of each work day.

B. Upon completion of painting work, clean all paint-spattered surfaces. Remove spattered paint by proper methods of washing and scraping, using care not to scratch or otherwise damage finished surfaces.

C. Protection: Protect work of other trades, whether to be painted or not, against damage by painting and finishing work. Correct any damage by cleaning, repairing or replacing, and repainting, as acceptable to Architect.

1. Provide "Wet Paint" signs as required to protect newly-painted finishes. Remove temporary protective wrappings provided by others for protection of their work, after completion of painting operations.

2. At completion of work of other trades, touch-up and restore all damaged or defaced painted surfaces.

END OF SECTION 09900

SECTION 10161 – SOLID PLASTIC TOILET PARTITIONS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Solid Polymer HDPE partitions.

1.2 RELATED SECTIONS

A. Section 04200 – Unit Masonry.

B. Section 05500 - Metal Fabrications.

C. Section 09300 – Tile.

D. Section 10800 – Toilet Accessories.

1.3 REFERENCES

A. ASTM International:
   1. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
   2. ASTM D 1735 - Standard Practice for Testing Water Resistance of Coatings Using Water Fog Apparatus
   3. ASTM D 2247 - Standard Practice for Testing Water Resistance of Coatings in 100 percent Relative Humidity

1.4 SUBMITTALS

A. Submit under provisions of Section 00800 - Administrative Requirements.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Literature indicating typical panel, pilaster, door, hardware and fastening.
   2. Preparation instructions and recommendations.
   3. Storage and handling requirements and recommendations.
   4. Installation methods.

C. Shop Drawings:
   1. Dimensioned plans indicating layout of toilet compartments and screens.
   2. Dimensioned elevations indicating heights of doors, pilasters, separation partitions, and other components; indicate locations and sizes of openings in compartment separation partitions for toilet accessories to be installed in partitions; indicate floor and ceiling clearances.
   3. Details indicating anchoring components (bolt layouts) and methods for project conditions; indicate components required for installation, but not supplied by toilet compartment manufacturer.

D. Selection Samples: For each finish product specified, one complete set of color selection 10 21 00-1 guides representing manufacturer's full range of available colors, textures and patterns.

E. Verification Samples: For each finish product specified, two samples representing actual product, color, texture and pattern.

F. Manufacturer's Certificates: Certify products meet or exceed specified requirements.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store and handle materials and products in strict compliance with manufacturer's instructions and recommendations and industry standards.

B. Store products indoors in manufacturer's or fabricator's original containers and packaging, with labels clearly identifying product name and manufacturer. Protect from damage.

C. Lay cartons flat, with adequate support to ensure flatness and to prevent damage to prefinished surfaces.

D. Do not store where ambient temperature exceeds 120 degrees F (49 degrees C).

1.6 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside the manufacturer's absolute limits.

B. Do not deliver materials or begin installation until building temperature maintained at a minimum of 60 degrees F (15.6 degrees C).

1.7 WARRANTY

A. Manufacturers Standard Warranty: Provide warranty for Solid Polymer HDPE Material: Against breakage, corrosion, and delamination for **twenty-five (25) years**.

1.8 COORDINATION

A. Coordinate Work with placement of support framing and anchors in walls and ceilings.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturer: ASI Global Partitions, located at: 900 Clary Connector; Eastanollee, GA 30538; Tel: 706-827-2700; Fax: 706-827-2710; Email:request info (sales@asi-globalpartitions.com); Web:http://asi-globalpartitions.com

B. Requests for substitutions will be considered in accordance with the provisions of NJM's project requirements.

2.2 COMPARTMENTS AND SCREENS

A. Toilet Compartments: Floor anchored/overhead braced solid polymer.

1. Compartment Depth and Width: As scheduled and indicated on Drawings.

2. Door Width: 24 inches (610 mm), minimum; at ADA accessible compartments 36 inches (915 mm) minimum.
3. Height Above Floor: 14 inches (356 mm).
4. Door/Panel Height: 55 inches (1397 mm).
5. Pilaster Height: 82 inches (2083 mm).

B. Privacy and Urinal Screens: Wall hung.
1. Screen Panel Size: 24 inches (610 mm) wide by 48 inches (1219 mm) high.

2.3 SOLID POLYMER TOILET COMPARTMENTS

A. Doors, Panels, Screens, and Pilasters: Single sheet solid, homogenous HDPE plastic material formed from waterproof, non-absorbent, high-density polyethylene resins; mark resistant self-lubricating surface; edges finished smooth.
1. Material: Solid, homogenous HDPE; 1 inch (25 mm) thick.
2. Rating: Class "B" Fire Rated per ASTM E 84.
3. Material shall be compliant with IBC 2021 and must be solid HDPE; foamed material is not allowed. Material shall be NFPA 286 compliant.
4. Edges: 1/4 inch (6 mm) radius machined edges.
5. Heat Sink: Aluminum heat sink, to dissipate heat from incendiary devices used by vandals, attached to bottom of doors and panels.

B. Finish: Pebble-textured homogenous color throughout material. Color: Charcoal #9511.

C. Door Hardware:.
1. Hinges: Cammed piano hinges. System is to be routed with no sight inside the compartment.
2. Latch: SS Slide latch with red and green indicator.
3. Strike and Keeper: 6 inch (152 mm) wrap-around flanges fabricated from heavy-duty extruded aluminum (6463-T5 alloy) with a brushed anodized finish.
4. Coat Hook and Bumper: Non-ferrous, chrome-plated, with black rubber tip for doorstop.
5. Fastening Hardware: Manufacturer's standard, Type 304 stainless steel, No. 4 satin finish, theft-resistant barrel nuts and machine screws.
6. Door Pulls: Non-ferrous, chrome plated. Standard on ADA compartments. Two per ADA door.

D. Mounting Brackets: Provide optional aluminum continuous brackets with theft resistant barrel nuts and shoulder screws.

E. Pilaster Shoes: Type 304 Stainless Steel No. 4 satin finish. Easy Stall shoe shall be of a one-piece design and integral to the mounting system and formed from 304 stainless steel 3 inch (76 mm) high with a No. 4 satin finish. Pilaster shoes are anchored to the pilaster with No. 10 stainless steel, vandal-resistant screws.

F. Headrail: Manufacture's standard anodized aluminum rail with anti-grip profile.

G. Pilaster Anchors: Floor Anchored/Overhead Braced.
1. Easy Stall shoe system. 1/4 by 2 inch (6 by 51 mm) steel screws attach Easy Stall shoe to floor.

2. Pilaster to be inserted into shoe and secured after height adjusted. Leveling adjustment to be concealed by pilaster shoe.
3. Height/leveling adjustment to be made via machine thread bolts inserted into factory installed threaded insert in bottom of pilaster.

PART 3 - EXECUTION

3.1 EXAMINATION AND PREPARATION

A. Inspect and prepare substrates using the methods recommended by the manufacturer for achieving the best result for the substrates under project conditions. Clean surfaces thoroughly prior to installation.

B. Do not proceed with installation until substrates have been prepared using the methods recommended by the manufacturer and deviations from manufacturer's recommended tolerances are corrected. Commencement of installation constitutes acceptance of conditions.

C. If preparation is the responsibility of another installer, notify Architect in writing of deviations from manufacturer's recommended installation tolerances and conditions.
1. Verify dimensions of areas to receive compartments.
2. Verify locations of built-in framing, anchorage, bracing, and plumbing fixtures.

3.2 INSTALLATION

A. Install in accordance with approved shop drawings and manufacturer's instructions.

B. Fasten components to adjacent materials and to other components using purpose-designed fastening devices.

C. Adjust pilaster anchors for substrate variations; conceal anchors with pilaster shoes.

D. Equip each compartment door with hinges and door latch.

E. Install door strike keeper on pilasters in alignment with door latch.

F. Equip each compartment door with one coat hook and bumper.

G. Installation Tolerances:
1. Maximum variations from plumb or level: 1/8 inch (3 mm).
2. Clearance between wall surface and panels or pilasters: 1-1/2 inch (38 mm) maximum.

3.3 ADJUSTING

A. Adjust and align hardware to uniform clearance at vertical edge of doors.

B. Adjust adjacent components for consistency of line or plane.

3.4 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

C. Remove factory protective coverings and clean finish surfaces in accordance with manufacturer's instructions before substantial completion.

END OF SECTION 10161

SECTION 10800 - TOILET ACCESSORIES

PART 1 – GENERAL

1.01 SECTION INCLUDES

A. Grab bars.

B. Mirrors.

C. Sanitary napkin disposal.

D. Specialty accessories.

1.02 REFERENCE STANDARDS

A. 16 CFR 1201 - Safety Standard for Architectural Glazing Materials Current Edition.

B. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design 2010.

C. ANSI Z97.1 - American National Standard for Safety Glazing Materials Used in Buildings - Safety Performance Specifications and Methods of Test 2015 (Reaffirmed 2020).

D. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products 2017.

E. ASTM A269/A269M - Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service 2015a (Reapproved 2019).

F. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2020.

G. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar 2015.

H. ASTM B86 - Standard Specification for Zinc and Zinc-Aluminum (ZA) Alloy Foundry and Die Castings 2018, with Editorial Revision (2021).

I. ASTM B456 - Standard Specification for Electrodeposited Coatings of Copper Plus Nickel Plus Chromium and Nickel Plus Chromium 2017.

J. ASTM C1036 - Standard Specification for Flat Glass 2021.

K. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass 2018.

L. ASTM C1503 - Standard Specification for Silvered Flat Glass Mirror 2018.

M. ASTM F2285 - Standard Consumer Safety Performance Specification for Diaper Changing Tables for Commercial Use 2004, with Editorial Revision (2016).

N. ICC A117.1 - Accessible and Usable Buildings and Facilities 2017.

1.03 WARRANTY

A. ASI Products are warrantied to be free of defects in material and workmanship for a period of **one (1) year** from date of invoice, unless indicated otherwise.

B. Mirrors: Warrantied to be free of defects in material and workmanship for a period of **fifteen (15) years** from date of invoice.

PART 2 - PRODUCTS

2.01 MANUFACTURER

A. Basis of Design Manufacturer: American Specialties, Inc: (ASI), Tel.# 914.476.9000 www.americanspecialties.com/#asi.

2.02 GRAB BARS

A. Grab Bars: Type 304 stainless steel.
   1. Standard Duty Grab Bars:
      a. Push/Pull Point Load: 250 lbf (1112 N), minimum.
      b. Clearance: 1-1/2 inch (38 mm) clearance between wall and inside of grab bar.
      c. Length and Configuration: As indicated in product listing.
      d. Products:
         1) Model 3801, 1-1/2 inch, length (as indicated on the Toilet Room Accessories Schedule) - Snap Flange, 1-1/2 inch (38 mm) OD, Safety Grip - Straight Grab Bar.
   2. 18 gauge tubing, 1-1/2" outside diameter, Type 304 stainless steel, satin finish, peened for better gripping.

2.03 MIRRORS

A. Mirrors: Stainless steel framed, 1/4 inch (6 mm) thick annealed float glass, ASTM C1036.
   1. Angle Frame: 0.05 inch (1.3 mm) angle shapes, with mitered and welded and ground corners, and tamperproof hanging system; satin finish.
   2. Products:
      a. Model 0600-2460, 24" wide x 60" high - Stainless Steel Inter-Lok Angle Frame - Plate Glass Mirror.
   3. 3/4" x 5/8" roll formed 18 gauge type 304, alloy 18-8 stainless steel angle has corners heliarc welded. Mirror is installed on a concealed hanging bracket that locks onto top and bottom of frame by tamper-proof set screws. Back plate is one piece, attached to frame with theft-resistant locking device.

2.04 SANITARY NAPKIN DISPOSAL

A. Unit equipped with top cover door and cabinet. Waste capacity of 1.2 gal (4.5L). User lifts lid to deposit waste material. Door, flanges, waste receptacle and cabinet shall be 22 gauge type 304 stainless steel alloy 18-8. Shall have top cover door and cabinet of 22 gage type 304 stainless steel alloy 18-8.

B. Products:
   1. Model 0852 – Surface-mounted units.
   2. Dimensions 7-7/8" W x 4" D x 9-11/16" H.

2.05 SPECIALTY ACCESSORIES

A. Seat Cover Dispenser: Stainless steel, reloading by concealed opening at base, tumbler lock.
   1. Products:
      a. Model 9477-SM - Surface-mounted - Profile Collection - Toilet Seat Cover Dispenser.

b. Type 304 stainless steel, satin finish.
c. Cabinet 22 gauge.
d. Multi-staked piano hinge door includes tumbler lock.
e. Dispenses 250 single or half-fold seat covers.

2.06 MATERIALS

A. Accessories - General: Shop assembled, free of dents and scratches and packaged complete with anchors and fittings, steel anchor plates, adapters, and anchor components for installation.
   1. Grind welded joints smooth.
   2. Fabricate units made of metal sheet of seamless sheets with flat surfaces.

B. Keys: Provide E114 keys for each accessory to Owner; master key lockable accessories.

C. Stainless Steel Sheet: ASTM A666, Type 304.

D. Stainless Steel Tubing: ASTM A269/A269M, Grade TP304 or TP316.

E. Galvanized Sheet Steel: Hot-dipped galvanized steel sheet, ASTM A653/A653M, with G90/Z275 coating.

F. Zinc Alloy: Die cast, ASTM B86.

G. Mirror Glass: Tempered safety glass, ASTM C1048; and ASTM C1036 Type I, Class 1, Quality Q2, with silvering as required.

H. Adhesive: Two component epoxy type, waterproof.

I. Fasteners, Screws, and Bolts: Hot dip galvanized; tamperproof; security type.

J. Expansion Shields: Fiber, lead, or rubber as recommended by accessory manufacturer for component and substrate.

2.07 FINISHES

A. Stainless Steel: Satin finish, unless otherwise noted.

B. Chrome/Nickel Plating: ASTM B456, SC 2, polished finish, unless otherwise noted.

C. Galvanizing for Items Other than Sheet: Comply with ASTM A123/A123M; galvanize ferrous metal and fastening devices.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify exact location of accessories for installation.

C. Verify that field measurements are as indicated on drawings.

D. See Sections 04200, 05500 and 06100 for installation of blocking, reinforcing plates, and concealed anchors in walls.

3.02 PREPARATION

A. Deliver inserts and rough-in frames to site for timely installation.

B. Provide templates and rough-in measurements as required.

3.03 INSTALLATION

A. Install accessories in accordance with manufacturers' instructions in locations indicated on drawings.

B. Install plumb and level, securely and rigidly anchored to substrate.

C. Mounting Heights: As required by accessibility regulations, unless otherwise indicated.
   1. Grab Bars: As indicated on the drawings.
   2. Mirrors: As indicated on the drawings.
   3. Other Accessories: As indicated on the drawings.

3.04 PROTECTION

A. Protect installed accessories from damage due to subsequent construction operations.

END OF SECTION 10800