ADDENDUM NO. 03

New Hanover County – Gordon Road Fire Department

Prepared by:

SAMET CORPORATION

8115 Market Street; Suite 304
Wilmington, NC 28411

Date of Issue: May 21, 2024

The following items take precedence over the referenced portion of the bidding documents for the above referenced Project and in executing a contract shall become a part thereof.

PROJECT CLARIFICATIONS

1. Reminder – All subcontractors that intend to submit pricing must go through Samet and Project Specific prequalification as outlined in the General Requirements manual. Bids will not be accepted by unqualified bidders.

2. Regarding minority Participation Forms (Affidavits A/B and C/D); if you are submitting on both projects, these forms will need to be completed with each project.

PROJECT DOCUMENTS

A. Construction Managers Project Manual Documents

1. Bid date remains unchanged as Tuesday, 5/28/24.

2. Bid location has changed from room 155 to Room 138. The location is still at the New Hanover County Government Center located at 230 Government Center Drive, Wilmington, NC 28403

3. Addition of the following documents:

    a. Notification to Trade Partner Potential Bidder
    b. QAQC Documents
        i. Trade Partner Quality Memo R2
        ii. QA QC Manual vJune2021
    c. Safet Documents
        i. Housekeeping Commitment Agreement – R1
        ii. Samet Site Specific Safety Plan R4
        iii. Site Specific Safety Checklist-R1

B. Construction Managers Trade Package Manual Documents

The following Scopes of Work have been modified, please see Addendum 03 individual files for a complete breakdown of revisions made:

1. 01A – Final Cleaning
2. 03A – Concrete
3. 04A – Masonry
4. 05A – Structural Steel
5. 05C – (Removed Bid Package)
6. 06D – Millwork
7. 07A – Waterproofing, Sealants & Sprayed Insulation
8. 07B - Roofing
9. 07D – Siding
10. 07E – (Removed bid package and combined with 07A)
11. 07F – (Removed Bid Package)
12. 07H – (Removed and combined with Bid Package 07A)
13. 08A - Doors, Frames & Hardware
14. 08B – Glass and Glazing
15. 08D – Roll up Doors
16. 09A – Framing and Drywall
17. 09B – Acoustical Ceilings
18. 09C – Flooring
19. 09D – Hard Tile
20. 09H – Painting
21. 10A – Specialties and Accessories
22. 10B – Signage
23. 10G – Awnings & Canopies
24. 10K – Fire Protection Specialties
25. 10L – (Removed Bid Package)
26. 11A – (Removed Bid Package)
27. 12A – Window Treatments
28. 21A - Fire Suppression
29. 22A - Plumbing
30. 23A – HVAC
31. 26A – Electrical
32. 31A – Site Work and Utilities
33. 31B – Pest Control
34. 32E – Landscaping & Irrigation

C. DRAWINGS AND SPECIFICATIONS

Add the following documents:

1. ASI 2 – Column Revisions
2. ASI 3 – Tile Revisions
3. Specification 019113 CX General Specification
4. Specification 220800 Cx Plumbing Specification
5. Specification 230800 Cx HVAC Specification
6. Specification 260800 Cx Electrical Specification

Remove the following documents:

NONE

Remove and replace the following documents:

NONE

NOTE: Addendum #03 must be acknowledged on the project bid form

END OF - ADDENDUM NO. 03

NOTIFICATION TO TRADE PARTNER POTENTIAL BIDDERS

At Samet Corporation, we understand that our strong, mutually beneficial relationships with subcontractors and suppliers are an important reason for our success. We consider our subcontractors and suppliers to be trade partners who play an integral role on Samet's project teams.

As a trade partner, subcontractors and suppliers are critical in consistently delivering on the fundamentals that we call **The Samet Way**.

- Plan the Job, Know the Job, Protect the Job, Execute the Job, and Make the Job Safe.

One of the ways that your company can help deliver on our core fundamentals is to review, incorporate, and execute within the following areas:

- Prequalification
- Quality Management System
- Safety & Incident Prevention
- Subcontract/Contract Requirements

Prequalification

Samet Corporation requires all Trade Partners to participate in our Prequalification process to work on any Samet Project. The prequalification process can be simplified by understanding the following:

- If you are new to Samet, you are required to "**Apply**" as a new Trade Partner.
- If you are a current Trade Partner, you are required to "**Renew**" your qualification status.
- Some Projects will require Project specific Prequalification requirements that are **separate** requirements outside of the Samet "**Apply**" or "**Renew**".

Below are general guidelines/requirements and/or documentation to be provided for the Prequalification Process:

- Visit Samet Corporation website at: www.sametcorp.com to find prequalification links, documents, and additional information. Further questions can be issued to the Samet Prequalification Manager.

Samet Site Safety & Incident Prevention Program

A key to our success has been Samet's Site Safety & Incident Prevention Program, which is designed to protect all employees, equipment, and people on or near our worksites from injury, accident, or loss. As a condition of doing business with Samet, all Trade Partners must comply with this program, in addition to all applicable local, state, and federal safety and health regulatory requirements. Additionally, Samet requires our Trade Partners to participate with Samet in achieving and maintaining North Carolina Department of Labor Building Star program requirements. This process includes working with OSHA consultants who will help your company improve your safety program. The Samet Way/Samet Above OSHA Requirements & other safety documents found under the Safety requirements section of bid documents outlines the requirements of each Trade Partner and should be considered when providing a proposal for any Samet Project.

Additional Requirements could apply for Project Specific Requirements and will be published within the Project Documents.

Quality Management System

Samet Corporation understands that consistent quality is the result of a commitment to follow and maintain a QMS and require participation from each team member involved in the project process. The QMS manual & related Quality Management System documents found under the QA/QC requirements section of bid documents outlines the requirements of each Trade Partner and should be considered when providing a proposal for any Samet Project.

Additional Requirements could apply for Project Specific Requirements and will be published within the Project Documents.

Subcontract / Contract Requirements

Samet Corporation requires all Trade Partners to review and execute a Samet subcontract agreement prior to mobilizing and working on a project site. A sample of our current subcontract agreement has been provided so that our trade partners can review and become familiar with requirements set forth by the agreement.

We have created this summary and provided the attached documents so that you and your company can become familiar with requirements of a successful trade partner relationship. This summary is not intended to be all inclusive, but rather an outline of minimal requirements to consider when providing a proposal to Samet Corporation.

SAMET CORPORATION

Trade Partner's Site-Specific

Quality Control

Plan

SAMET CORPORATION

Subcontractor's Site-Specific Quality Control Plan

Trade Partner	**Samet Job No.:**	
Attn:	**Project Name**	
	Fax:	
Email:	**Scope of Services:**	
Phone:		

Email:	**Project Start:**
Phone:	**Project Finish:**

Contractor Quality Team

Quality Control Director:		**Ph:**		**Email:**	

(Responsible for the overall QA/QC Program for the CONTRACTOR)

Project Superintendent:		**Ph:**		**Email:**	

(Responsible for this project's specific quality program for the CONTRACTOR)

Site Quality Coordinator:		**Ph:**		**Email:**	

(Responsible for all inspections and field documentation for this project for the CONTRACTOR)

Trade Partner Quality Team

Operations Manager:		**Ph:**		**Email:**	

(Responsible for the overall QA/QC Program for Trade Partner)

Project Manager:		**Ph:**		**Email:**	

(Responsible for this SSQCP for Trade Partner)

Site Quality Representative:		**Ph:**		**Email:**	

(Responsible for all inspections and field documentation for this SSQCP for Trade Partner)

Trade Partner's Quality Program Objective:

The principle objective of this Site-Specific Quality Control Plan (SSQCP) is to provide the CONTRACTOR and the Owner with the specified materials and high-quality workmanship that meets or exceeds their expectations. To accomplish this, both Samet Corporation's management and its employees are committed to continuous improvement in the quality of the products and services we provide.

This SSQCP has been established to ensure that all work performed by employees and Trade Partners of Samet Corp meet or exceed all contractual and regulatory requirements. Our Quality Team (defined above) takes total responsibility for the implementation of this program and its success for our scope of work on this project.

Quality Control Requirements

Topic	Required Actions & Documentation	Initials
Documentation Control: RFI's COR's	Keep an organized file of all required project documents up to date at all times. Submit timely RFI's. *Include suggestions for best outcome with the RFI.* Submit timely Changes. Include cost, detail and time impacts of all ASI's, RFI's or other Project changes. NO LATE CO's. Communicate with CONTRACTOR when the inspection or test reports will be completed and the frequency of submissions.	
Submittals and 100% Material Verification	Conform to contractual requirements regarding submittals. If the project specifications do not call out what is to be submitted, then Samet Corp will create a list of products to be used. At the time of First Work-in-Place inspection or earlier, field verify that materials conform to the approved material submittal for the materials in question.	
Manufacturer's Application	Confirm the Approved Submitted Material is compatible for with other products that interface with this duct. What does it go on, go in, or what's on it? Confirm interface details.	
Storage & Handling of Materials/Equipment First Delivery	Identify any special requirements and documentation specific to Samet Corp's contract. Execute First Delivery Checklist.	
Pre-installation Meetings	Attend Samet's Pre-Installation Meetings as a primary Trade Partner or coordinating Trade Partner with the Trade Partner's qualified Field Supervisor(s)* performing the work and the Trade Partner's Project Manager and any other key personnel at all Pre-installation Meetings requested. *Includes supervisors for tiered Trade Partners.	
First Work-in-Place Inspections	Manage First Work-in-Place inspections and reviews with CONTRACTOR, Designer, etc. Document Standard of Performance.	
Quality Control Checklists & Special Documentation	Trade specific Inspection Checklists will be utilized on this project. All checklists are to be signed off by Samet Corp's Site Quality Representative (SQR.) All inspection results and documentation will be completed and turned over to the CONTRACTOR at job completion.	
Testing & Inspections	A Testing and Inspection Plan will be prepared by Samet Corp's SQR that lists all specified tests and inspections from the Project Specification for Samet Corp's scope of work. Tests & Inspections will be witnessed by Samet Corp's SQR. Samet Corp's SQR will track all contractual and non-contractual inspections on a Testing & Inspection Log.	
Non-Conformances	Samet Corp will document and notify Trade Partner to rectify all non-conformances. All issues will be corrected per the approved corrective action plan and completed in an acceptable timeframe tracked on a Deficiency Log.	

Progress Photos	**Trade Partner and Samet Corp will take daily progress photos, documented to confirm work complies with Project Requirements.**	
As-built Drawings	**The master as-built drawing set kept by Samet Corp in the field office will be updated by your field supervisor on a weekly basis, as applicable.**	
Close-out and Warranty Procedures	**Submit all Close-out Data, complete and timely to Project Requirements. Warranty, Guarantee, Attic Stock, Manufacturer Maintenance Data, and Training – each as may be required.** **Provide responsive action to Warranty Issues. Manage Warranty issues with a goal of overall Customer Satisfaction.**	

Trade Partner's Site Quality Representative (SQR)

Samet Corp Representative

Quality Inspection

Forms

Inspection and Testing Requirements

Item #	Item Description	Inspection Checklist or Inspection Form

Notes: Inspection Checklists and Inspection Report Forms shall be attached.

Signature: _____ Date: _____
Trade Partner's Site Quality Representative (SQR)

Signature: _____ Date: _____
Samet Corp Representative

SAMET CORPORATION

Inspection and Testing Log

JOB NAME				Samet Corporation								
LOCATION:												
CONTRACT NUMBER:												
SPECIFICATION SECTION	TEST REQUIRED	ACCREDITED/APPROVED LAB		SAMPLED BY	TESTED BY	LOCATION OF TEST		DATE OF TEST	DATE SENT TO OWNER	CONFORMS	DOES NOT CONFROM	REMARKS
		YES	NO			ON SITE	OFF SITE					

QUALITY INSPECTION

QUALITY

Date: _____ **Time:** _____ Project: _____ Job No: _____

Location: _____ **Meet at:** _____

Bid Packages: _____ Trade Partner(s): _____

Specification Section(s): _____ Drawing No(s): _____

Quality Inspection Sign-Off		
Trade Partner Names:	**Trade Partner Signatures**	**Date:**
Attached photos documenting the inspection. Photos to be taken by the Trade Partner and Samet Corporation representative.		

QUALITY INSPECTION

QUALITY

Does the area/item Inspected conform to the Contract Documents**?** ☐ **Yes** ☐ **No**

If not, is re-inspection by Samet acceptable for approval? ☐ **Yes** ☐ **No**

Comments: _____

_____

_____

_____

_____

_____

_____

Acceptance Signatures:

Samet _____ **TC** _____

Owner Present: ☐ **Yes** ☐ **No** **Arch / Eng. Present:** ☐ **Yes** ☐ **No**

QUALITY COORDINATION

QUALITY

The Contractor shall coordinate all Electrical requirements for equipment provided under this Trade Partner's Scope of Work.

Provide a written statement confirming coordination of voltage requirements for all equipment requiring an electrical connection. Statement shall bear the names and signatures of the Trade Partner supplying the equipment and the Electrical contractors.

Coordinate location, position, orientation, or other requirements for connecting equipment with Electrical and other trades as may be needed.

VOLTAGE COORDINATION STATEMENT

This statement is to confirm that the voltages of all equipment provided under this Trade Partner's Scope of Work have been coordinated with the Electrical Drawings and Specifications, as well as with the Electrical Contractor.

Trade Partner: _____ Project Manager Name: _____

Project Manager Signature: _____

Date: ____ /_____ /_____

Electrical Trade Partner: _____ Project Manager Name: _____

Project Manager Signature: _____

Date: ____ /_____ /_____

Connections:

Who Supplies Disconnects? _____

Who Wires Disconnects to Power Supply? _____

Who Wires Disconnects to Equipment? _____

Who Supplies Fire Alarm Devices? (e.g. - Smoke / Heat Detectors for Duct) _____

_____

Who Wires Fire Alarm, Security Devices? (e.g. – Tamper Switches, Door Hardware) _____

_____

Notice:

At the time of discovery of a discrepancy within the Project Documents as regards power requirements, the Trade Partner shall issue a Request for Information identifying the following: Specifications, Drawings, Submittals, or other Project Documents related to the discrepancy. Include specific information as to the nature of the discrepancy and a suggestion for resolving the issue.

(No Changes will be issued for cost or time impacts related to a failure to coordinate the appropriate power requirements for this Trade Partner's Scope of Work.)

QUALITY COORDINATION

QUALITY

COORDINATION OF TRADES

The Contractor shall give full cooperation to other trades and shall furnish all information necessary to permit the work of all trades to be installed satisfactorily and with the least possible interference or delay.

Coordinate with all preceding trades and follow-on trades related to this Trade Partner's Scope of Work. Confirm compliance of preceding and follow on work to the Work of this Trade Partner with regards to the following:

- Specifications (e.g. – Tolerances match or exceed follow-on trade tolerances.)
- Drawings
- Submittals
- Manufacturer's Applications
- Specified Trade Association / Institute Requirements (e.g. – ACI, AISC, etc.)

Preceding Trade Partner(s): _____ Project Manager Name: _____

Project Manager Signature: _____

Date: ____ /_____ /_____

Trade Partner: _____ Project Manager Name: _____

Project Manager Signature: _____

Date: ____ /_____ /_____

Follow-on Trade Partner(s):_____ Project Manager Name: _____

Project Manager Signature: _____

Date: ____/_____ /_____

NOTICE:

Notify Samet Corporation in writing at the time of discovery of a discrepancy affecting this Trade Partner's Scope of Work prior to the application of the Work of this Subcontract. Re-assess after corrections are made and execute this document.

(No Changes will be issued for cost or time impacts related to a failure to coordinate with and inspect the preceding or follow-on work with this Trade Partner's Scope of Work.)

SAMET CORPORATION

QUALITY MANAGEMENT SYSTEM

SAMET CORPORATION

Greenboro, NC | Charlotte, NC | Raleigh, NC | Wilmington, NC | Charleston, SC | Savannah, GA | sametcorp.com

TABLE OF CONTENTS

Quality is Samet's Core Value commitment to a culture dedicated to customer success, consistently delivering on expectations through the 5 Fundamentals of ***The Samet Way*** to:

Plan the Job,
Know the Job,
Protect the Job,
Execute the Job, and
Make the Job Safe.

Through collaboration and communication, Samet will work with all team members in planning, establishing, and executing our client's expectations.

The following manual identifies a step by step process of tracking Definable Features of Work (DFOW) through a series of Quality Assurance and Quality Control processes ensuring products meet or exceed agreed upon project team expectations. Tracking the Definable Features of Work (DFOW) through *Preparatory, Initial, and Follow-up Phases* defines the process for *Establishing and Executing* project team expectations for quality.

TABLE OF CONTENTS

		Quality Workflow Spreadsheet										
		Preparatory Phase				Initial Phase		Follow-up Phase				
SAMET CORPORATION		Submittal	Mock-up	Pre-Installation Meeting	Trade Partner QMS / Coordination	First Delivery	First Installation	Substrate / Closeup Inspection	Benchmark Inspection 30%	Benchmark Inspection 70%	3rd Party Inspections	Non-Conformance Items Resolved
CSI Division Group	Definable Feature of Work -DFW	Quality Established →				Quality Executed →						
Concrete 03	Reinforcing Steel											
	Foundations											
	Slabs-on Grade											
	Slabs-on Deck											
	Slab Podium											
	Cast-in Place Walls											
	Pre-Cast Concrete Walls											
	Concrete Paving & Walks											
	Other											
Masonry 04												
	Concrete Masonry Units											
	Masonry Veneer											
	Other											

ABOVE: The Quality Workflow Spreadsheet is customized to the project-specific requirements to illustrate the DFOWs quality steps for the project team as further outlined in Samet's Quality Management manual.

1. INTRODUCTION

Our objective at Samet Corp is to not simply provide our clients with a product that meets their need, but that is at a standard that sets us apart from our competition. Samet knows that by adopting a Quality Management System (QMS), we can add significant value to our project delivery process.

Consistent quality is the result of a commitment to follow and maintain a dedicated QMS and requires dedicated participation from each team member involved in the project process – this includes the Owner, General Contractor, Architect, Consultants and Trade Partners. This manual outlines the policies, standards and procedures that comprise Samet Corp's Quality Management Program.

2. PRECONSTRUCTION QUALITY ACTIVITIES

Pre-construction activities include those taking place prior to commencing physical construction at the jobsite. These pre-construction activities frequently involve decisions that impact constructability and quality performance. Samet Corp's Pre-Construction Manager will coordinate all pre-construction services with the Owner, architect, Trade Partners and other consultants.

The following paragraphs describe the most common pre-construction activities. Some may not apply to all project's requirements.

2.1. Design Peer Review

Samet Corp Project Lead (Project Manager or Project Executive) and Pre-Construction Manager will be our team leaders to work in conjunction with the Owner and Design Consultants to gather contractor input during the pre-construction phase of this project. This team, throughout the preconstruction phase, will develop the Samet Project Management Plan (PMP) that will be integral to the entire project and assist in outlining pre-construction activities.

2.2. Constructability Reviews

Early and continuous involvement by the entire project team during these reviews will reduce the likelihood of including products/designs prone to installation or functional difficulties based upon the collective experience with those products/designs. Our Pre-Construction Manager and Project Lead will work collectively with the Design Team to review constructability and cost impacts throughout the pre-construction phases.

2.3. Review of Plans and Specifications

Before beginning construction and as early as development of plans and specifications allow, Samet Corp's Project Team will perform an in-depth review of the contract documents. This review will seek to identify

conflicts, unclear or incomplete items. Examples include:

- Dimensional conflicts between civil, architectural, and structural drawings, etc.
- Dimensional conflicts between plans and details
- Incomplete details and/or details that do not pertain to the project
- Conflicting fixture and equipment locations, designations or quantities, as applicable
- Location or routing conflicts among architectural and MEP items, as applicable

Early identification of discrepancies will minimize future RFI/ASI contract documentations and reduce the likelihood of future rework/change order work.

2.4. Documenting Existing Conditions

Depending on the particular scope of work, someone designated from Samet Corp's Project Team will inspect and create a photographic and/or video record that documents existing conditions, paying particular attention to pre-existing physical defects. Items to be photographed include:

- Existing structures within or directly adjacent to the construction limits which are to remain
- Adjacent buildings and structures outside the construction limits which may be affected by construction activities
- Sidewalks, curbs, paving and drainage structures
- Trees and existing vegetation

- Above-ground utilities
- Soil Conditions
- Operable devices, such as, doors and windows
- Special consideration for unknown underground pipes or other utilities that must be considered for this project

2.5. Samples, Submittals and Procurement

As early in the project as possible, Samet Corp's Project Team will develop a comprehensive submittal log and schedule. The log will identify all items requiring submittal by Samet Corp, its Trade Partners and suppliers. The submittal log will take into account the entire submittal review and approval process including possible revisions, re-submittals, fabrication time, and delivery to the jobsite to establish submittal dates that coincide with the overall project schedule.

Submittal samples shall demonstrate the level of quality that is acceptable to the owner and the responsible design professional. In some cases, this may require a mock-up outside of the actual area of construction. In other cases, it may be the first acceptable unit of production or first Definable Feature of Work (DFW) by Samet Corp or its Trade Partners (See Section 3.5.1 below.) These samples and mock-ups will constitute the minimum level of workmanship. In all cases, these samples or mock-ups will be preserved as a baseline for quality.

Samet Corp shall strictly comply with contract submittal requirements. No materials, equipment or supplies, requiring submittal review, shall be procured until submittals have been approved by the owner, architect and/or design consultants. Copies of approved submittals, including manufacturer's installation instructions, shall be maintained by Samet electronically for future review. Physical samples shall be maintained in either Samet Corp's home or field office. Samet Corp's Project Team will be responsible for the management of the submittal process and coordination of procurement activities. All variations or substitutions must be approved by the owner in accordance with contract requirements.

Samet Corp's PM will ensure that all purchased building materials, equipment, and supplies conform to project requirements. Vendors will be selected, in part, on their ability to provide the items specified, on time and packaged to ensure that they are appropriately protected during loading, unloading and storage at the jobsite.

2.6. Material receiving at the Jobsite

Samet Corp's Project Team will verify that representative items delivered to the jobsite are those specified and in strict conformance with approved submittals prior to installation (See Material Verification Section 3.6 below.)

2.7. Trade Partner Selection

Trade Partner selection shall follow Samet Corp's Trade Partner pre-qualification and selection policies and procedures. Selection procedures take into account but are not limited to safety, quality, capability/capacity evaluations, experience with market/project type, as well as pricing all with the goal of avoiding a "low bid focus" selection and ultimately selecting the most qualified Trade Partners for the project. It is Samet Corp's policy to conduct a Trade Partner Scope Review Meeting for each several qualified bidders prior to bid package award to help ensure that the proper Trade Partners are selected for the project.

Trade Partner Site Specific Quality Control Plan

Trade Partners may be required to submit a Site-Specific Quality Control Plan (SSQCP) to Samet Corp for review and approval by Samet Corp's Project Team before work can commence. This SSQCP will describe measurements, inspections, and inspection/testing forms to be completed to ensure conformance with project quality requirements. This SSQCP will include Inspection Checklists, photographs, samples, flood, pressure, and other tests, as applicable, including the frequency of testing. Each Trade Partner shall designate a Site Quality Representative (SQR) to manage its SSQCP. A sample template for a Site-Specific Trade Partner Quality Control Plan is provided as Attachment 7.2.

2.8. Mock-ups (as applicable)

In addition to any other contractual requirements, it is Samet Corp's policy for all applicable projects to construct a progressive, non-aesthetic mock-up of the building envelope system and to pre-test it as necessary to evaluate the building envelope constructability. Additionally, as part of the pre-construction planning process, Samet Corp's PM will confirm the owner's contractual requirements for in-situ or freestanding mock-ups. In addition to these contractually defined mock-ups, Samet Corp's PM will identify other high-risk construction assemblies as candidates for additional in-situ or freestanding mock-ups, such as:

- Exterior skin --- particular attention shall be devoted to transitions between dissimilar materials,

(windows to skin, skin to parapets, brick to plaster etc.) and construction details that do not conform to the manufacturer's standard details, and concerns expressed by the building skin sub-Trade Partners over the approved construction documents and submittals

- Roofing
- Window and door penetrations
- Pre-cast or GFRC panels
- Equipment and Furniture Mock-ups to assess Wood Blocking & Room Utility Layouts: Power, Water, ADA Requirements, etc.
- Drywall finish/texture
- Wall/ceiling finishes
- Floor finishes
- Cabinets and millwork
- Countertops and fixtures
- Hardscape
- Mock-up units, such as, bathrooms, kitchens on multi-unit projects

Samet Corp's PM will determine the exact number and type of mock-ups to be constructed on their specific project. Mock-ups will be utilized to establish appropriate minimum levels of quality wherever needed. First Installation Inspections may also serve the purpose of a mock-up.

2.9. Water Testing (as applicable)

As part of the pre-construction planning process, Samet Corp's PM will confirm the owner's contractual requirements for water testing. In addition to these contractually defined water tests, Samet Corp's Quality Manager and Project Team will identify other high-risk construction assemblies as candidates for additional water tests that may be performed by Samet Corp, a Trade Partner, or other consultant, such as:

- Exterior skin
- Curtainwall systems
- Windows
- Skylights
- Roof Penetrations
- Exterior doors, thresholds and store fronts
- Balcony and deck transitions to the building wall
- Planters above occupied spaces
- Flat roofs
- Shower pans/Bathtubs
- Fountains
- Pools

2.10. Factory/Shop Inspections (as applicable)

As part of the construction planning process, Samet Corp's PM will identify high-risk construction assemblies, equipment or materials that a designated Project Team member will attend applicable factory witness tests. Samet Corp's PM will provide its draft list of construction assemblies, equipment or materials for factory/shop inspections to the owner, architect and other consultants for their review and comment, as applicable. The owner, architect and other consultants may choose to accompany Samet Corp's representative to the applicable factory/shop location to co- witness these factory witness tests. Samet Corp's PM will seek written approval of each assembly that will require factory/shop inspections from owner/architect/consultant, as applicable.

3. CONSTRUCTION QUALITY ACTIVITIES

3.1 Roles and Responsibilities for Quality Control (QC) Samet Corp's Project Team Duties:

- Participate in a Quality Charrette start-up meeting led by Samet's Quality Director and/or Samet's Quality Manager at Mobilization to the site to finalize plans for Quality and Review the Quality Workflow Matrix.
- Coordinate and conduct quality meetings and inspections
- Perform peer review of plans and specifications and document all relevant information to coordinate with Project Team for minimization of future document clarifications
- Coordinate visits by manufacturer or distributor representatives to provide training and/or site inspections/observations
- Coordinate the QC efforts of Samet Corp, Trade Partners and third-party inspectors in compliance with project specific QMP
- Samet Project Team will have authority to stop work if workmanship or materials do not conform with project requirements
- Review work-in-place for conformance with submittals, manufacturer's installation instructions and project documents and specifications
- Confirm all inspections and tests are performed in conformance with project requirements
- Inspect Samet Corp's and Trade Partner's work, issue Observation Reports that identify Non-Conformance, monitor correction and completion of non-conforming work items on an Observation Log (See Section 3.5 below.)

3.2 Quality Control Administration

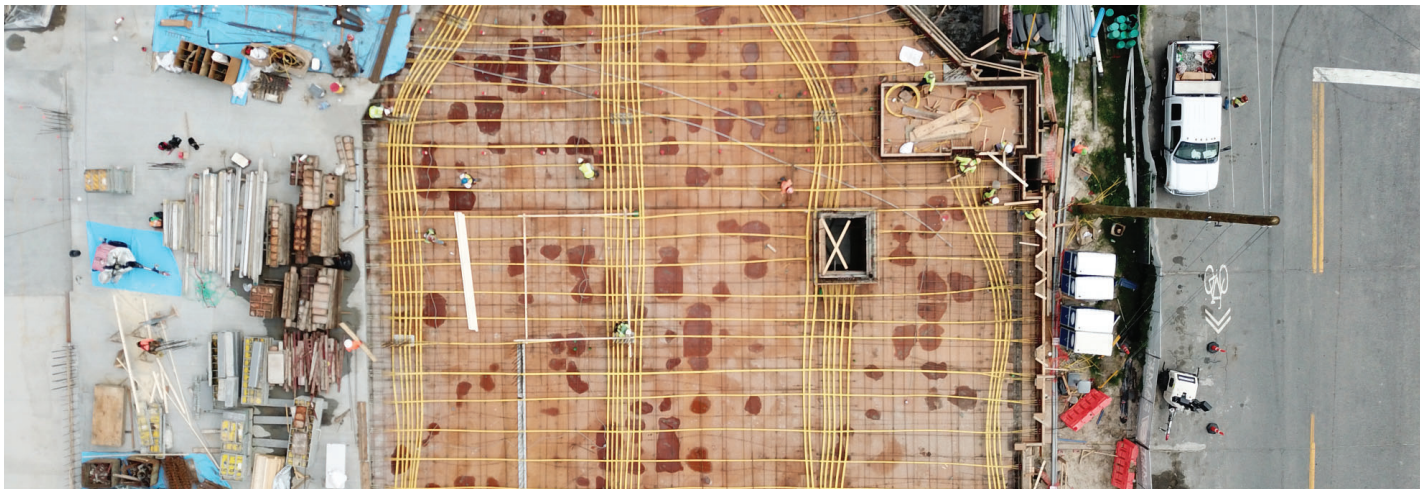
Samet Corp's PM, Project Superintendent and Quality Manager will participate in the management of the site-specific quality processes. Sufficient inspections and tests of all items of work performed by Trade Partners and sub-Trade Partners will be performed on a continuous basis to ensure conformance with the quality of materials, workmanship, fit, finish, function and performance as defined by the contract documents. A Quality Charrette meeting is conducted on each project at or near time of mobilization of the project to communicate Samet's Quality Management Plan to the project team. From this meeting, project specific considerations are developed identifying Definable Features of Work and Responsibility for managing Quality Items on the project.

Implementation

- Samet Corp's PM will receive all testing data from testing firms/laboratories and will route the test results to:
- Samet Corp's Project Superintendent and quality coordinator
- Samet Corp's Project Superintendent will forward copies to other parties, as appropriate

Workmanship Inspections

Samet Corp's Superintendent will inspect items that will be covered-up by a following operation. Samet Corp's Superintendent and Quality Manager will verify that representative items are installed in accordance with the contract documents before covering up. Photographs or videos of representative work to be covered-up is a best practice that will be adhered to on all Samet projects (See Section 3.7 below.)



Documentation

Samet Corp's Project Team will prepare and maintain timely records of all QC activities, inspections and tests. Trade Partner's Quality Control Representative will do the same for its QC activities: Pre-Installation Meetings, Inspections, Tests, and Observations.

Inspection and Testing Log (See sample provided as Attachment 7.3)

As inspections and tests are performed, Samet Corp's Superintendent or designee will record them in our Project Management System. Inspection and Testing Log will include the following items:

- Specification section
- Description of the test performed
- Location of the test
- Who performed the test
- Date the test was conducted
- Date test results were received and forwarded to the appropriate parties
- Any remarks to appropriate parties

Punchlist / Final Inspection

Near the completion of all work or any increment thereof, Samet Corp's Project Superintendent or designee will conduct an inspection of the work and develop a punchlist of items, which do not conform to the contract documents. The punchlist will include the estimated correction date to correct deficiencies. The Project Superintendent or designee will make follow-up inspections to validate correction of all punchlist items.

The following is a typical sequence of punchlist / final inspection activities:

- Pre-punch by Samet Corp
- Deficiency correction and verification - pre-final inspection
- Final inspection to include the owner's punchlist
- Deficiency correction and verification sign-off by the owner or the owner's representative
- Final Acceptance
- Commissioning
- Final system testing, as applicable
- System operation and sequence verification, as applicable
- O&M Manuals
- Delivery of record drawings and warranties
- Instruction and training procedures (videotaped sessions may be applicable)
- Owner Training
- Third Party Reports

3.3 Inspection and Testing Plan

Samet Corp Project Team will prepare an Inspection and Testing Plan delineating all inspections and tests required by the contract documents.

Information on the Inspection and Testing Plan will include:

- CSI specification reference, paragraph, item number, etc.
- Who will perform the inspection or test? i.e., Samet Corp, Trade Partner, material testing firm, third party consultant, manufacturer's representative, etc.
- Test or inspection description
- Test or inspection frequency
- Test or inspection report form that will document the test results

Samet Corp's Project Team will maintain an Inspection and Testing Log that documents all inspections and testing performed for Samet Corp's and Trade Partner's scopes of work.

It is best practice to involve manufacturer's representatives in inspections and approvals for high-risk building elements such as:

- Roofing systems
- Window systems
- Other elements of the building envelope
- Specialized and/or proprietary installations such as equipment, flooring systems, etc.
- Other systems, as applicable

3.4 Observations - Non-conformance Tracking Procedure

An Observation identifies a non-conforming condition that can be either material- related, workmanship related, design-related or a combination thereof.

Whenever a member of Samet Corp's Project Team, owner, architect or consultant notes a non-conformance --- partially complete or complete ---- installation of the non- conforming item in question will not continue until the non-conforming work has been corrected

and conforms with the requirements of the contract documents.

Observations, non-conforming items, will be documented in the Project Management System (See ProCore - Observations.)

Samet Corp's Project Team is responsible to track self-performed non-conforming work and non-conforming work performed by Trade Partners. Any item that is not corrected on the spot (that day) will be documented by a Quality Inspection Report and posted to the Non-conformance Report Log.

Samet Corp's non-conformance procedure is as follows:

- Observations identify Non-conforming work items that are recorded in the ProCore and tracked until documented as corrected.
- Observation Reports of non-conformances will be issued by Samet Corp's Project Team designee to the project team
- In most cases, the non-conforming work will be removed and replaced with conforming work, i.e., proper workmanship and/or approved materials.
- Samet Corp's Project Team designee will update the Observation Log indicating the status of NCR's in process and maintain a file of open/closed reports
- If applicable, Samet Corp's PM will forward the Observation Log to the owner, who, in turn, will forward same to the architect or consulting engineer for resolution, as applicable
- If applicable, upon completion of disposition instructions from the designer and/or others, Observations of NCRs will be forwarded to Samet Corp's PM so that corrective actions can be undertaken
- If acceptable to all parties, the Observation will be closed and the Observation Log updated, accordingly
- In some cases, the disposition may be "accept as is" with no rework or corrective action(s) required, as approved by owner, architect, consultant or building official, as applicable. In these cases, the Observation item will be closed, and the Observation Log updated.
- Contractor responsible for defective work will perform corrective work at their own expense.
- After the corrective action(s) are complete, the work will be verified and documented by Samet Corp's Project Team, the owner, architect, or consulting engineer, as applicable

3.5 Quality Control (QC) Program

3.5.1 Definable Features of Work (DFW)

The Construction Specifications Institute (CSI) organizes work based on specifications with unique requirements and specific quality objectives. This includes identification of approved manufacturers in each CSI specification. At a minimum, each specification section and sub-section will be considered a DFW.

Each DFW may have a separate inspection and testing requirement. Either Samet Corp, Trade Partners, vendors, or third-party inspection companies will perform these inspections and tests. Theses inspections and tests are listed on the Inspection and Testing Plan.

3.5.2 The 3 Phases of Quality Control (QC)

Construction quality depends on effective planning, coordination, communication, supervision and testing. Samet Corp's Project Team will use the following tools to achieve quality:

- Quality planning meetings documented by meeting minutes (See Sections 3.5.3 and 3.5.4 below)
- Confirm that materials meet project

requirements at the time of purchase and delivery to the jobsite (See Section 3.5 below)

- Inspections during construction (See Section 3.5.5 below)
- Recordkeeping/documentation

Quality Control (QC) consists of tests, inspections and observations before installation commences (Preparatory Phase), during First Work-in-Place (Initial Phase) and while installation continues (Follow-up Phase.)

The 3 phases of Quality Control (QC) are:

- Preparatory Phase (sometimes called the Pre-installation Phase)
- Initial Phase (sometimes called the First Work-in-Place or First Installation Phase)
- Follow-up Phase (daily inspections)

The 3 phases of QC allow Samet Corp to plan, schedule and install work in an orderly, consistent way that minimizes rework.

The 3 phases of Quality Control (QC) are:

Preparatory Phase (sometimes called the Pre-installation Phase)

Initial Phase (sometimes called the First Work-in-Place or First Installation Phase)

Follow-up Phase (daily inspections)

3.5.3 Preparatory Phase or Pre-installation Meeting and Inspection

A Preparatory Phase meeting and inspection will be performed before construction commences on each applicable construction activity or Definable Feature of Work (DFW.)

This phase involves a Pre-installation meeting and inspection conducted by Samet Corp's PM or Project Superintendent and attended by the following individuals, as appropriate:

- Samet Corp's Quality Coordinator and Trade Partner's SQR
- Owner's representative
- Design professional(s)
- Third party QC consultants/inspectors hired by the owner, Samet Corp or Trade Partners
- The craft supervisors (both Samet Corp and the Trade Partner) responsible for the work under review
- Manufacturer's representatives for building envelope components or other high-risk construction assemblies

The goal of this meeting is to focus Samet Corp's and Trade Partner's quality efforts to Deliver Expectations by preventing deficiencies rather than detecting deficiencies.

The following documents should be considered at this meeting:

- Approved submittals, MSDS sheets, and shop drawings
- Manufacturer's installation instructions
- Applicable building codes
- Current contract drawings including recent RFI's and ASI's
- Current contract specifications
- Current schedule
- Material lead times and delivery dates
- Coordination with other Trade Partners
- Safety hazard analysis
- Samet Corp's Inspection Checklists and Inspection Templates in ProCore, the Project Management System.

Samet Corp's Project Superintendent will notify all attendees of the meeting at least 48 hours in advance. Minutes of the Pre-installation meeting and inspection will be taken and distributed to all attendees by Samet Corp. A sample form to document a Pre-installation meeting and inspection is included.

Samet Corp's Project Superintendent, Quality Coordinator or designee will perform the following activities before beginning work on each significant construction activity or Definable Feature of Work (DFW.)

- Review contract specifications
- Review contract drawings, shop drawings, samples and submittals
- Review code requirements
- Review manufacturer's installation instructions
- Review mock-up requirements, if any
- Establish the timing and scope for the First Installation Phase and Follow-on Phase inspections including a review of the appropriateness of the applicable inspection checklist
- Verify receipt of approved factory test results
- Check all materials and equipment are on-hand and have been tested, submitted, and approved as required
- Check that arrangements have been made for the required tests and inspections with the appropriate parties
- Ensure all preliminary work that is necessary for the work to be accomplished has been satisfactorily completed. Examine and photograph the work area to ensure that required preliminary work has been satisfactorily completed.
- Review site access, materials handling, and storage requirements
- Check all required tools and equipment are correct and available
- Discuss qualifications of foreman/crews, construction methods, schedule of installation, tolerances, workmanship, standards and the approach to providing quality work by pre-planning and identifying potential problems.
- Review safety hazard analysis
- Confirm required Material Safety Data Sheets (MSDS's) are available and readily accessible to work crews

3.5.4 Initial Phase: First Delivery and / or First Installation Inspections

A First Delivery will be performed when materials are delivered to the site. Initially, the Trade Partner will conduct a First Installation Inspection identifying the First Installation Inspection will be accomplished immediately prior to and at commencement of construction of a significant construction activity or Definable Feature of Work (DFW) to ensure compliance with project requirements.

Samet Corp's Project Superintendent, Quality Coordinator or designee will perform the following activities as part of the First Work-in-Place or First Installation process on each significant construction activity or Definable Feature of Work (DFW.)

- Review the minutes from the Preparatory Phase or Pre-installation meeting above with the actual installation crew to install the First Installation
- Examine and photograph work area to assure all preliminary work has been accomplished
- Check dimensions
- Verify that all materials are in strict compliance with construction documents, samples, submittals and shop drawings
- Check for use of defective or damaged materials
- Verify that manufacturer's installation instructions are being followed for storage and application.
- Check new work for compliance with construction documents
- Review and approve testing and inspection results

- Establish the acceptable level of workmanship
- Check for omissions and resolve any differences of interpretation
- Check safety compliance
- Document Inspection in the appropriate ProCore Inspection

3.5.5 Follow-up Phase or Inspections

Trade Partners will complete a review of their work and notify Samet personnel when ready for confirmation that work meets Project Expectations. Inspection personnel will continually refer to the standards established in the Preparatory Phase and the First Installation Inspection above when making these Benchmark or trade-specific Tool-Belt Inspections contained in ProCore.

- Follow-up phase inspections/observations will:
- Ensure work continues to conform to the construction documents
- Ensure quality of workmanship is maintained
- Ensure required tests and inspections are being performed
- Ensure that non-conforming or deficient work is being corrected
- Ensure work is taking place safely
- Ensure required certifications, calibrations and measurements are accurate

NOTE: Additional Preparatory and First Installation Inspections and Benchmark Inspections will be conducted on the same construction activity if:

- The quality of on-going work is unacceptable
- There are changes to personnel in the responsible third-party QC consultant's organization
- There are changes in onsite production supervision or work crews
- Work on a construction activity is resumed after a substantial period of inactivity, or
- Other problems develop

Final Follow-up inspections will be conducted by Samet Corp's project superintendent or designee when conducting the final acceptance walk-through with the owner, architect and consultants (See Section 3.2 above.)

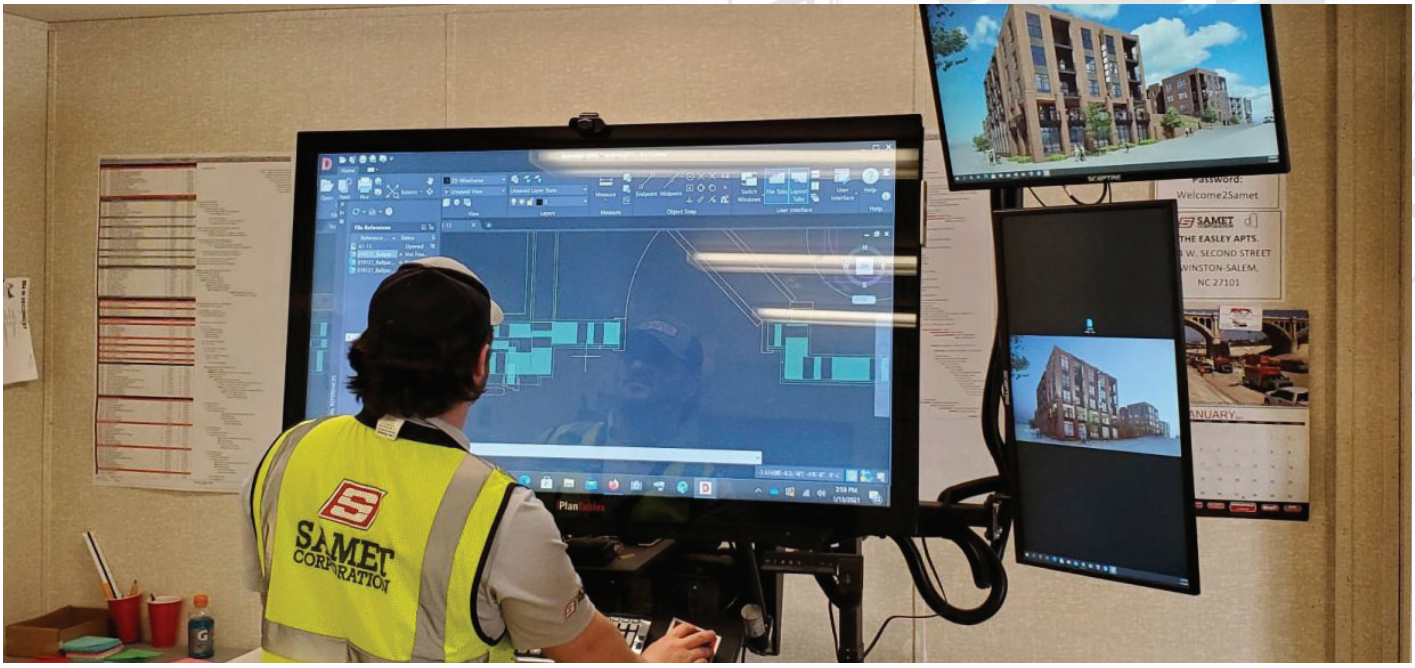
3.6 Material Verification

As described in prior sections above, for all significant construction activities or Definable Features of Work (DFW), Samet Corp's project superintendent or designee shall verify that all materials received at the jobsite are in strict compliance with contract documents, samples, approved submittals and shop drawings upon delivery or as soon as possible and absolutely no later than the Pre-installation phase. Custom fabricated materials shall be verified at the earliest possible opportunities, in some cases, prior to shipment – see Section 2.10 above.

Of particular importance are drywall tapes, drywall joint compounds, mastics, caulking, grout, fasteners, welding supplies, and other consumable supplies. This procedure ensures that unapproved materials are not installed on your job.

During Follow-up inspections/observations, Samet Corp's quality coordinator should continue to verify that approved materials are being installed on your project. All material substitutions must be in compliance with contract documents. Unapproved material substitutions shall not be allowed.

It is best practice to have Trade Partners certify, in writing, to Samet Corp that all materials they procured and delivered to your jobsite continue to conform to project



requirements. This certification can be accomplished by having the Trade Partner's SQR complete the First Delivery Inspection in ProCore or an equivalent document.

3.7 Digital Photography Requirements

Photos are an integral part of each project specific QMP. Samet Corp requires progress photo documentation of as-built conditions during the course of construction. Although it is not practical to photograph every inspected item, Samet Corp's policy is to provide representative photographic documentation for each Definable Feature of Work (DFW) or phase of a project. Samet Corp's digital photograph procedure covers both conforming and non-conforming work.

By taking photos on a frequent and regular basis and organizing them logically and labeling them accurately, a complete pictorial record can be assembled post-construction that will document that Samet Corp's work and work by sub-Trade Partners conform to the contract documents.

Samet Corp's digital photography guidelines:

- Take digital photos on regular intervals
- Make sure the auto date feature is turned on and that the date is accurate
- Be sure to shoot from several viewpoints and use the same viewpoints every time
- Include photos in daily/weekly/monthly reports when applicable
- Photos should be filed chronologically in folders. Where applicable a duplicate image will be filed in the appropriate topical folder, for example, by Trade or Date.
- Observations on Non-Conformance should note the type of Observation, Assignee accountable for the item (Trade Partner and Trade Partner Representative), a Due Date, Location, and other pertinent and descriptive information required to effectively communicate the Observation. These should be compiled, tracked, and documented as resolved as promptly as possible.
- Any photo of an Observation identifying non-conforming or Punchlist items should have a corresponding photograph of the conforming or acceptable work condition

3.8 Closure Inspection and In-Unit Closure Inspections

This procedure uses a sign-off inspection in the Project Management System, ProCore, and digital photographs to prove that all work that will be covered-up or enclosed is shown to comply with project requirements.

Project Superintendent or designee will inspect items that will be covered-up by a following operation. Project Superintendent will verify that all items are installed in accordance with the construction documents before covering up. Photographs or videos of representative work to be covered-up are to be completed by Samet Corp's project superintendent or designee. Samet Corp will

obtain approval from independent third-party inspectors as required by the contract documents.

This procedure applies to subsurface, concrete, overhead, and in-wall installations including but not limited to below ground work, such as, auger cast piles, pier caps, below ground utilities, poured in-place slabs and walls, framed walls, chases, ceilings, and soffits, and roofs – essentially any condition to be concealed by follow-on work.

All Closure Inspection Templates are located in ProCore, Samet's Project Management System.

This procedure can require multiple steps of inspection/ documentation before closure or cover-up can commence. Samet Corp's project superintendent or designee is responsible to implement and enforce this procedure. The procedure works this way:

1

Step 1: the area to be enclosed or covered-up is walked by Samet Corp's Project Superintendent or designee and each of the Trade Partner SQR's to assess completion and conformance with project requirements. Any and all incomplete, unsatisfactory or non-conforming work is identified.

2

Step 2: The responsible parties, Samet Corp's crews and/or Trade Partners, complete all incomplete, unsatisfactory or non-conforming work. Samet Corp's Project Superintendent is notified by each Trade Partner that their work is now in conformance with project requirements.

3

Step 3: Samet Corp's Project Superintendent or designee verifies the conforming work that was corrected by Samet Corp or Trade Partners. Photo documentation records the as-built condition. If no further inspection is required, follow-on work may proceed.

4

Step 4: 3rd Party Inspectors or Authority Having Jurisdiction Inspectors are scheduled to conduct their inspection of the area in question. If no further inspection is required, follow-on work may proceed.

5

Step 5: The follow-on work is released, or we address any 3rd Party or AHJ items returning to Step 2.

3.9 Water Intrusion Prevention

3.9.1. Preconstruction

As part of the pre-construction process, the Project Superintendent, will review the project specific materials list and the sequence of construction.

Samet Corp will make a good faith effort to identify work practices, materials, or inadequate design that may create or expose vulnerable materials to elevated moisture conditions during and after construction. In general, the following factors may contribute to creating unsuitable conditions. These should be evaluated during this stage:

- Improper use of vulnerable materials that are exposed to high moisture conditions
- Improper or inadequate design creating high moisture conditions
- Improper design or construction critical building systems (i.e.; roof, exterior wall and window systems) that compromises the building envelope and allows uncontrolled moisture intrusion to occur.
- Improper or inadequate mechanical systems that contribute to high moisture conditions due to mechanical failures, or high relative humidity conditions
- Improper construction sequencing that exposes the building or vulnerable materials to high moisture conditions.
- A list of the potentially problematic areas, work practices, and construction materials to be considered during the pre-construction phase will be maintained by the home office and periodically updated as additional items of concern are identified.

3.9.2 Construction Scheduling

Under most circumstances, Samet Corp is responsible for creating the construction schedule and scheduling Trade Partner's activities. The development of this schedule typically is set based on work-start dates and interim and final deadlines for completion. Samet Corp's Project Team should attempt to schedule work in order to prevent the building and vulnerable construction materials from being exposed to high moisture conditions during construction.

Consideration must be given to three distinct construction periods when evaluating the potential for building and vulnerable construction materials being exposed to high moisture conditions.

These include:

- "Exposed Phase": This includes the period when all building materials are exposed to precipitation, which typically includes framing and placing of concrete.
- "Partially enclosed" Phase: This includes the period after the roof deck is installed but the building is not fully weathered in. Typically, many vulnerable materials are installed during this phase of construction.
- "Enclosed Phase": This includes the phase when the building envelope and the roofing system are complete, and the interior finishes are being installed.
- Whenever possible, the construction schedule will be developed so that vulnerable materials are protected to the maximum extent possible and the building envelope is completed prior to the installation of any interior finishes or other vulnerable materials.

- Temporary Environmental Controls should be assessed in project planning to protect project finishes including temp and permanent utilities and the use of protected building systems as permissible.

3.9.3 Inspections During Construction

The Project Superintendent, quality coordinator or designee will inspect the project site during construction and document these inspections in ProCore, Samet's Project Management System. The site will be inspected to assure it is being maintained in a manner to control water intrusion. The inspection frequency will be dependent on project conditions but at a minimum should be completed every week.

More frequent Inspections may be necessary during the following times:

- Extended periods of inclement weather
- Particular stages of work such as the installation of critical building envelope components

Samet Corp's project superintendent, quality coordinator or designee will document the Inspection in ProCore. These must be reviewed periodically and supplemented with any noteworthy project specific information. This team member must identify "at risk" conditions and document any response action required as an Observation in order to identify, track, and correct any deficiencies and document the date and time the non-conformance was completed.

3.9.4 Water Intrusion Plan and Procedure

It is Samet Corp's policy to not only undertake all precautions, but also in the event of water infiltration, to immediately remove any wet organic materials.

- Additional floor protection will be utilized at specific strategic floors at shaft openings and other slab penetrations, such as sealing openings, providing temporary dams around openings, as field conditions dictate.
- Provide temporary roofing, or first layer of roofing. This should be installed as soon as practical.
- Drains must be tied in at all possible locations from the roof down through the building to drain rainwater as soon as practical
- Grading during construction should be performed in a manner to control water run-off from the building and control of surface water at undeveloped areas of the site until permanent site installations are installed.

4. POST-CONSTRUCTION QUALITY ACTIVITIES

Post-construction/Turnover quality activities start shortly before construction and will be completed and continue through the warranty period established by the contract documents. At and beyond completion of each project, our project team and Client Services Manager will work as needed to assist the owner through the Close-out, Warranty issues, and beyond to maintain that relationship for continued client satisfaction in their new facility.

4.1 Warranty

- Samet Corp's standard warranty program (1 year) provides for a single point of contact for all warranty requests. Samet Corp's one-year warranty program is managed by the Quality Director.
- Samet Corp's warranty program will log warranty callback requests, differentiating between maintenance and warranty matters and ensuring prompt response by Samet Corp or its Trade Partners to warranty issues during the warranty period.
- All warranty requests will be tracked with a requirement that there will be closure to each issue.
- A Samet Corp Representative will participate in an 11 Month Warranty Walk with the Owner or Owner's Representative to answer any questions, discuss maintenance requirements and address any potential issues.

Post-Construction Documentation

Quality records will be filed in an indexed, retrievable fashion. These records will become part of the project's permanent records. Files are to be digitally maintained for the time period specified by risk management.

Quality records include the following as applicable:

- Daily reports
- Inspection reports
- Test reports and logs
- Inspecting technician's certifications
- As-built drawings (sometimes called record drawings)
- Approved submittals
- Quality audit reports
- Certifications of materials
- Non-conformance reports (NCR's) and records of

related remedial work and acceptance
- Photo and video documentation
- Radiographic film
- Required records of personnel qualifications
- Results of miscellaneous tests, inspections and examinations performed by any responsible party
- Special process procedures
- Final inspections
- Final system testing
- Commission reports
- Operation and Maintenance (O&M) Manuals
- Training of owner personnel with video recording of these events
- Warranties
- Copies of City/County Inspection Cards
- Copies of Certificates of Occupancy from building officials

ABBREVIATIONS

DFW	Definable Feature of Work
O&M	Operations & Maintenance
OM	Operations Manager
PM	Project Manager
QM	Quality Manager
QA	Quality Assurance
QC	Quality Control
QD	Quality Director
QIR	Quality Inspection Report
QMP	Quality Management Plan
QMS	Quality Management System
QMM	Quality Management Manual
SQR	Trade Partner's Site Quality Representative

4.2 Warranty Call-backs during the Warranty Period

- Samet Corp will endeavor to satisfy the warranty and post-construction issues of its customers during the contractual warranty period in accordance with the specific terms and conditions of the Owner/Samet Corp contract.
- Samet Corp will endeavor to respond to warranty callbacks within 1-2 business days and requires similar responsiveness on the part of its Trade Partners. It is Samet Corp's goal to resolve each warranty call as quickly as possible after receiving a warranty callback request and Samet Corp requires a similar commitment on the part of all Trade Partners.
- At the completion of each project, the owner is given a warranty response instruction manual in paper or digital form instructing them of procedure to request warranty response. In addition, owners are given a directory of all Trade Partners that might be involved in warranty call back and instructed to call the Trade Partner directly if necessary and always if it is an emergency situation. Owner is responsible to take necessary immediate actions to minimize consequential damages in the event of an emergency.

4.3 Warranty Call-backs after the Warranty Period

- Once the warranty period has expired and potentially responsible Trade Partners and suppliers may no longer be under a contractual obligation to respond, it is nevertheless Samet Corp's goal to try to resolve all such complaints if it is commercially feasible. Samet Corp understands that proactive customer service at this stage can be a huge company differentiator.
- Samet Corp's policy is to respond to warranty related calls that are received after the contractual warranty period has expired as follows:
  - Samet Corp will receive the call and complete a site visit and preliminary investigation of the issue as appropriate for the issue.
  - There will be no charge to the owner for this site visit or preliminary investigation.
  - Samet Corp will provide the owner or interested party with a summary of its findings, including one or more possible avenues for resolving the complaint.
  - Samet Corp may offer to resolve the issue(s) at its own cost, or discounted cost, or at market rate, depending on the facts and circumstances.
  - Samet Corp will not proceed with any work without authorization from the complaining party or other potentially responsible parties.

5. GLOSSARY OF TERMS

Approval: acceptance that equipment or system has been properly installed and is functioning in the tested modes according to the contract documents.

Architect / Engineer (A/E): the prime consultant and sub consultants who comprise the Design Team. Develops the tenant and/or owner operational criteria and requirements for the project.

QUALITY MANAGEMENT SYSTEM

Building Systems: the architectural, structural, mechanical, plumbing, life safety and electrical systems along with their respective subsystems, equipment and components.

Certified Inspection Reports: Certified Inspection Reports are those signed by approved Inspectors attesting that the items inspected meet the specification requirements other than any exceptions included in the report.

Certified Test Reports: Certified Test Reports are reports of tests signed by qualified authorized personnel attesting that the test results reported are accurate, and that items tested either meet, or fail to meet, the stated minimum requirements. These tests reports include those performed by Factory Mutual, Underwriters Laboratories, Inc., Independent Testing Laboratories and others.

Compliance: the development and checking of a process to ensure that it does not contradict a standard or set of regulations.

Compliance audit: a specific type of review that identifies areas where an organization's processes fail to meet the requirements of a given regulation or another requirement.

Conformance: the development and checking of products and other concrete objects produced by a process, to ensure that they do not violate a standard or other definition of the product.

Continuous Quality Improvement (CQI): philosophy and attitude for analyzing capabilities and processes and improving them repeatedly to achieve the objective of customer satisfaction.

Cost of Poor Quality (COPQ): the costs associated with providing poor quality products or services. There are 4 categories of costs: internal failure costs (costs associated with defects found before the customer receives the product or service), external failure costs (costs associated with defects found after the customer receives the product or service), appraisal costs (costs incurred to determine the degree of conformance to quality requirements) and prevention costs (costs incurred to keep failure and appraisal costs to a minimum).

Customer Service: the results of delivering a product or service that meets customer requirements.

Deficiency: a condition in the installation or function of a component, piece of equipment or system that does not comply with the contract documents (that is, does not perform properly and is not complying with the design intent.)

Definable Feature of Work (DFW): each specification section and sub-section in the contract documents.

Design Team: the various parties responsible for working together in providing for the design and preparation of contract documents for the various building systems of the facility.

Factory Testing: testing of equipment on-site or at the factory, by factory personnel.

Field Tests: tests or analysis made at, or near, the jobsite in connection with the actual construction including, but not limited to, concrete and asphalt batch plants, pre-cast

concrete plants and similar establishments directly involved in the construction.

Inspection: examining and testing supplies, services, materials, components or assemblies to determine contract compliance.

Manufacturer's Certificate of Conformance or Compliance: a certificate signed by an authorized manufacturer's official attesting that the material or equipment delivered meets the specification requirements.

Non-Compliance or Non-conformance: see *Deficiency*.

Non-conformance Report Log: the contemporaneous list of all outstanding non- conformances.

Operations Manager (OM): Samet Corp's executive responsible for construction field operations and the director of Samet Corp's Quality Management Program.

Owner Training: owner training and orientation on equipment and systems provided by the Trade Partner or Samet Corp.

Plan-Do-Check-Act (PDCA) Cycle: a 4-step process for quality improvement. In the first step (plan), a plan to effect improvement is developed. In the second step (do), the plan is carried out, preferably on a small scale. In the third step (check), the effects of the plan are observed. In the last step (act), the results are studied to determine what was learned and what can be predicted. The plan-do-check-act cycle is sometimes referred to as the Shewhart cycle, because Walter A. Shewhart discussed the concept in his book Statistical Method from the Viewpoint of Quality Control, and as the Deming cycle, because W. Edwards Deming introduced the concept in Japan. The Japanese subsequently called it the Deming cycle. Also called the plan-do-study-act (PDSA) cycle.

Performance Verification: the process of determining the ability of a system to function and deliver services in accordance with the design intent.

Procedure: the steps in a process and how these steps are to be performed for the process to fulfill the customer's requirements.

Process: a set of interrelated work activities characterized by a set of specific inputs and value-added tasks that make up a procedure for a set of specific outputs.

Product: the term "product," including the plural thereof, means a type or a category of manufactured goods, constructions, installations and natural and processed materials or those associated services whose characterization, classification or functional performance determination is specified by standards.

Project Management Team (PMT): management personnel from the General Contractor assigned to manage Samet Corp's subcontract. This includes the PM, the Project superintendent, Project Engineer, Field Engineers, other Discipline Engineers and Superintendents.

Project Manager (PM): the assigned senior management person of Samet Corp responsible for Samet Corp's subcontract.

Project Team (PT): see *Project Management Team*.

Quality Audit: a systematic, independent examination and review to determine whether quality activities and related results comply with planned arrangements and whether these arrangements are implemented effectively and are suitable to achieve objectives.

Quality: conforming to the plans, specifications and applicable codes and standards; conformance to the

requirements, i.e., meeting the customer's requirements.

Quality Assurance (QA): those activities to validate the effectiveness of the quality control program.

Quality Assurance Procedure (QAP): Trade Partner's or Samet Corp's quality assurance procedures in place.

Quality Control (QC): individual activities, such as, inspecting and testing by which conformance to the project specifications is validated.

Quality Control Plan (QCP): Trade Partner's or Samet Corp's quality control plan.

Quality Coordinator: Site person responsible for quality control including peer review, inspections, documentation and testing

Quality Level: the specific degree of excellence, basic nature, character or kind of performance of a particular item or group of items as specified.

Quality Management System (QMS): consists of the people and processes in place to ensure construction meets the customer's requirements.

Quality Management: the application of a quality management system in managing a process to achieve maximum customer satisfaction at the lowest overall cost to the organization while continuing to improve the process.

Quality Management Plan (QMP): the project-specific plan to ensure quality as outlined in this Quality Management Manual.

Site Quality Representative (SQR): sub-Trade Partner's employee responsible to implement Trade Partner's site-specific quality control plan.

Specifications: the construction specifications contained in the contract documents from the owner.

Testing Laboratory: the term "testing laboratory" means any "person" whose functions include testing, analyzing or inspecting "products", as defined above, and/or evaluating the designs or specifications of such "products" according to the requirements of applicable standards.

Test Procedures: the detailed systematic and sequential process that must be executed to fulfill the system functionality and performance testing. The Trade Partner shall utilize information such as industry standards, manufacturer requirements and recommendations to develop the required test procedures.

Test Requirements: requirements specifying what modes and functions, etc. shall be tested

Third Party Evaluation, Inspection and Testing: elements of inspection that determines the properties of functional operation of materials or components by the application of established scientific principles, construction practices and procedures with formally documented records by a completely objective company/organization/individual.

Total Quality Management (TQM): a term initially coined by the Naval Air Systems Command to describe its Japanese style management approach to quality improvement. Since then, TQM has taken on many meanings. Simply put, it is a management approach to long-term success through customer satisfaction. TQM is based on the participation of all members of an organization in improving processes, products, services and the culture in which they work. The methods for implementing this approach are found in the teachings of such quality leaders as Philip B. Crosby, Edwards Deming, Armand V. Feigenbaum, Kaoru Ishikawa and Joseph M. Juran.

Vendor: supplier of materials, supplies or equipment.

Warranty Period: warranty period for a project including equipment, components and systems. Warranty begins at agreed substantial completion and extends for at least one year, unless specifically noted otherwise in the contract documents and accepted submittals.

Housekeeping Commitment Agreement

Contractor Company Name:			
Contractor Supervisor Name:			
Project Name/Region:		Date:	

A clean jobsite leads to a safe jobsite. With that basic principle in mind, I (and all of my tiered subcontractors) agree to follow these rules:

- Allocate adequate resources to ensure this housekeeping standard is maintained throughout their time on the project.
- Be responsible and accountable for each of your workers and any tiered contractor(s) under your control assigned to work on this project for complying with this Housekeeping Standard.
- Agree to allocate the necessary personnel, equipment, and supplies required to comply with this standard.
- Dumpsters for general trash, construction debris (wood, metal, concrete and etc.) and or specific recycling dumpsters pursuant to contract requirements will be provided.
- Samet will provide trash containers on site for general trash and debris. There will be no bottles, food wrappers, cups, etc. thrown on the ground.
- When containers are ¾ full they will be either removed from the site or dumped in a large metal dumpster provided by Samet.
- All materials, equipment, etc. brought on site shall be organized and stored in areas designated by project team. Subcontractors are responsible for organizing material, equipment and tools so they do not create a tripping hazard or impede/block exits out of the area or rooms they are working in**.**
- Subcontractors are responsible for daily clean-up of excess material and debris. Excess material and debris shall be deposited in appropriate containers throughout the day.
- In areas and rooms where multiple subcontractors are working each subcontractor shall clean up their own excess material and debris.
- When work is completed in a room or area all excess material and debris shall be removed and the area or room broom cleaned.
- Any stored materials must be easily transportable to make way for clean up.

The complete copy of Samet Corporation Housekeeping Standard is contained in the Site Safety and Incident Prevention Program. There may be Terms and Conditions in your subcontract agreement that may override or supersede the above.

I fully understand that if my company or my tiered contractor(s) fail(s) to comply with any part of this Housekeeping Standard, that I will incur all costs associated with Samet Corporation cleaning up your areas of responsibility to meet this standard. Additionally, any and/or all the work being performed by my company may be suspended until such time this standard has been accepted by Samet Corporation.

Contractor Performing Work: _____ **Sign:** _____ **Date:** _____

Contractor/Project Safety: _____ _____ _____

SAMET CORPORATION

SITE SPECIFIC SAFETY PLAN

Revised on 05/2023

SAMET SAFETY

Safeguarding Families

Table of Contents

SITE SPECIFIC SAFETY PLAN

This SSSP was prepared to assist all workers in understanding the health and safety expectations and requirements of Samet Corporation on this project. Compliance with this Plan is expected and a condition of work. Contractors' project managers and superintendents have overall responsibility for the implementation and the execution of this Plan.

On this project site, Samet Corporation enforces its Safety Program through its Superintendent, Safety Manager and other designees and weekly meetings with our own labor force and contractor employees (including tiers) stressing the importance of maintaining a safe and productive work site.

Health and safety will always remain the top priority for all levels of management, supervision, and workers engaged in construction activities. Health and safety will never be sacrificed in lieu of schedule, cost, production, or any other component of the work process.

To comply with this philosophy, the project's contractors will:

- Thoroughly plan all work activities and operations so they are performed safely, as well as efficiently.
- Effectively communicate the health and safety requirements of Samet Corporation this Site-Specific Safety Plan to all contractors and their workers through open communications, comprehensive training, assessments, and workplace inspections.
- Develop an understanding, among those in leadership on this project, of their responsibilities and accountability for providing a safe and healthful workplace.
- Plan and coordinate work operations and activities to minimize or eliminate situations which may jeopardize worker's health and safety due to conflicting or simultaneous work operations or activities.
- Communicate to all workers that safety is their responsibility, and they will be held responsible, accountable, and assigned the appropriate authority for their individual safety and the safety of their co-workers.

All contractors will incorporate, as a minimum, OSHA 29 CFR 1926 Construction Safety Standards, OSHA 29 CFR 1910 General Industry Standards (as applicable), specific state safety regulations, specific owner requirements, project safety rules, and this SSSP when determining the safe work practices and protection of all workers. If any of these standards, requirements, or procedures conflict, the more stringent requirement shall prevail.

Refer to Samet's TSW "Above OSHA Requirements"

The term "contractor" within this document refers to any contractor or subcontractor of any and all tiers. Samet Corporation, as the general contractor, is referred to by name.

SITE SPECFIC SAFETY COMMITTEE

A site-specific safety committee will be utilized to assist project team in implementing this SSSP and to work as a team to identify and correct safety or health hazards, identify unsafe work practices and offer solutions to safety issues. Participation is mandatory and each contractor must designate at least one (1) foreman level (or higher) to actively participate.

Refer to Samet's TSW for Project Safety Committee

CONTRACTOR SAFETY PERFORMANCE

Samet Corporation expects all contractors to execute their work on this project with a proactive commitment to safety at all levels. Each contractor should plan their work focusing on protecting their workers from incidents and injuries. The following are actions that each of us can take to improve safety performance on this project:

- Attend and actively participate in toolbox meetings.
- Discuss safety in all meeting.
- When you talk about safety, talk about people, not numbers or statistics.
- Ask where the next injury is likely to happen and what can be done to prevent it – Run The 2 Minute Drill
- Fill a Pre-Task Plan for all high-risk activities on a daily basis and have it communicated/acknowledged by all crew members involved.
- Recognize individuals and groups daily for working safely – Implement MVA program
- Take positive actions when you see someone doing something you believe is unsafe. Talk to them about your concern for their safety, not about violating rules or procedures -Safeguarding Families
- Take responsibility for people's safety that work with you, for you and around you.
- Fine ways to express care and concern for people and work to improve the dignity and respect people experience on the project.
- Make and keep promises around safety issues.

Samet Corporation or their representative will continually monitor and assess each contractor for compliance with this SSSP and appropriate regulatory requirements.

Immediate corrective action will be taken to eliminate any safety discrepancy, hazard, at-risk behavior, or violation observed.

DESIGNATED CONTRACTOR COMPETENT PERSON

Each contractor will designate a competent person as defined by OSHA 29 CFR 1926.32(f) as "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 as authorization to take prompt corrective measures to eliminate them" as their project safety representative. This person(s) name will be submitted to Samet Corporation and this person must have the authority and responsibility to ensure the proper implementation and enforcement of this SSSP.

The General Trades Competent Person/Foreman designated will be expected to have an adequate knowledge of OSHA construction standards,

The Scaffold Competent Person designated to oversee erection and dismantling of scaffolds will be expected to have an above average knowledge of OSHA 29 CFR 1926.450 Subpart L –Scaffolds, and proof of qualification training.

The Trenching and Excavation Competent Person designated to oversee digging trenches and excavations will be expected to have an above average knowledge of OSHA 29 CFR 1926.650 Subpart P – Excavations, and proof of qualification training.

The Fall Protection Competent Person designated to oversee his company's fall protection plan will be expected to have an above average knowledge of OSHA 29 CFR 1926.500 Subpart M – Fall Protection, and proof of qualification training.

The Electrical Competent Person designated to oversee his company's electrical protection plan will be expected to have an above average knowledge of OSHA 29 CFR 1926.400 Subpart K and NFPA 70E – and proof of qualification training,

The Rigging qualified person designated to oversee the rigging of structural steel, concrete panels, materials or other equipment hoisted above the ground will be expected to have an above average knowledge of OSHA 29 CFR 1926.251. Competent Person designated for rigging structural steel shall have an above average knowledge of OSHA 29 CFR 1926.753 Hoisting and rigging, and formal training.

The Safety Competent Person designated to oversee the safety of their employees and subcontractors will be expected to have an above average knowledge of OSHA construction standards.

As a minimum, each of these competent persons must:

- be proficient in the development and execution of pre-task safety plans, competency plans and risk/severity assessments. Audit, document and submit as required.
- obtain an OSHA 10-hour certificate from a certified OSHA trainer and a minimum of 3 years' experience as a foreman/competent person. OSHA 30-hour certificate and at least 5 years construction safety training is highly recommended. Experience must be in the non-residential construction industry.
- obtain certified competency training conducted by an authorized OSHA certified trainer.
- conduct regular safety meetings with workers to instruct them on safe work practices and requirements.
- timely submission of all safety related documents.
- conduct documented pre-task safety plans and communicate daily to workers to ensure compliance with safe work practices, this Site Safety and Prevention Program and OSHA safety regulations.

For the purposes of this Program, the use of the words "competent person", in any format, is defined pursuant to the OSHA definition as stated above.

WORK-RELATED INJURIES, ILLNESSES, AND INCIDENT INVESTIGATION - MONTHLY INCIDENT SUMMARY REPORTS

An incident is defined as any unplanned or undesired event that results in or has the potential to result in a work-related injury/illness, property damage, or disruption of business where the cause was from human errors or omission.

Every incident will be investigated to determine the probable root causes (s) and steps required preventing a similar occurrence from happening in the future. All contractors must fully cooperate with Samet's investigation under the law.

All work-related injuries/illnesses and incidents must be reported to Samet Corporation immediately and submit a preliminary report within 24 hours of the incident. A final report must be submitted within 48 hours for review and implementation of lessons learned to prevent further incidents from occurring.

Each contractor must submit a report monthly indicating the below information. This form must be submitted even if the subcontractor has no incidents to report.

- Total man hours worked, first aid cases, OSHA medical treatment cases & lost workday cases, restricted work cases.

CONTRACTOR SAFETY SUBMITTALS

Prior to beginning work, each contractor shall submit the following minimum (but not limited to) documentation:

- Contractor's written site-specific safety programs including, but not limited to substance abuse and silica exposure control.
- Contractor's written housekeeping plan and Samet Housekeeping Commitment Agreement
- Energized Work Permit.
- Detailed job hazard analysis/pre-task safety plan
- Personal protective equipment hazard assessment and certification (if applicable)
- Annual crane inspections
- Verification of OSHA and or project required training as necessary. Employee training shall be verified by contractor's management and documentation of training submitted to Samet team. Examples of training may include:
    - OSHA 10- and 30-hour construction safety training
    - Fall protection
    - Pre-task safety training and risk assessment
    - Ladders
    - Scaffolds
    - Trenching
    - Crane signalperson
    - Confined spaces
    - Respiratory protection
    - Lockout/Tagout
    - Rigging (plan)

- Mechanized equipment (all types) operators
- Traffic control (public right-of-way)
- First aid
- Competent persons by scope of work

Throughout the course of the project each contractor will be required to submit various on-going safety documents as required by the scope of work. These submittals may include but are not limited to:

- Weekly Jobsite Inspection Checklist.
- Daily documented scaffold, trench, crane, aerial lift, rigging/hoisting equipment, PFAS, welding machines, generators, ladders, power tools, heavy equipment (i.e., backhoe, dump truck, front end loader) and forklift inspections.
- Weekly safety toolbox meeting training records.
- Daily pre-task safety plan
- Air sampling data (if respirator in use)

VIOLATION OF SAFETY AND HEALTH REQUIREMENTS

Violations of statutory health and safety regulations, project safety rules and policies contained in this plan or at-risk behavior will not be tolerated. All identified hazards are to be abated immediately. When a hazard cannot be immediately corrected, a written explanation is to be submitted to Samet Corporation team. Failure to correct hazards may result in disciplinary actions or suspension of part or all work.

DISCIPLINARY PROGRAM

Each worker has an individual responsibility to work safely and minimize unsafe actions. Samet Corporation reserves the right to discipline any contractor based on safety violations committed by their employees of any tier, or the contractor itself.

Samet Corporation has established a progressive disciplinary program as outlined below:

Committing an unsafe act, practice of disregard for policies (see below) that is not considered Immediately Dangerous to Life or Health (IDLH) can result in the following consequences:

- First occurrence: Verbal warning with a note to file
- Second occurrence: Written warning, re-training, or action to include, but not limited to suspension from project, holding monthly invoice checks, etc.
- Third occurrence: Written notification of actions up to termination from project site.

Other-than-serious unsafe safety acts may consist of, but not limited to:

- Failure to wear hard hat properly.
- Failure to wear safety glasses/eye protection when required.
- Failure to use hearing protection when required.
- Failure to wear proper work boots/shoes and clothing.
- Failure to wear seatbelts on mechanized equipment.
- Failure to have first aid kit.
- Using frayed/cut drop cords.
- Using drop cords less than #14 AWG.
- Using unrated ladders.
- Failure to submit daily safety reports.
- Failure to submit weekly toolbox safety talks.

Committing unsafe acts and or practices that are considered Immediately Dangerous to Life and Health (IDLH) may result in worker and supervisor's immediate removal from the project. Samet Corporation also reserves the right to immediately discipline/sanction a contractor. Sanctions include but are not limited to immediate abatement of the IDLH condition/hazard or a mandatory meeting with contractor's ownership to discuss actions to improve safety performance. Samet Corporation reserves the right to terminate a contractor for repeated IDLH safety violations.

IDLH safety violations may include, but are not limited to:

- Failure to follow fall protections requirements.

- Removing guard rails and not putting them back in place.
- Working in an unprotected trench greater than 5 feet deep.
- Failure to follow the Substance Abuse Policy.
- Possession of firearms, explosives or dangerous weapons.
- Violation of project security rules and procedures.
- Fighting, horseplay, practical joking or gambling.
- Entering a confined space without following procedures.
- Failure to follow lock-out/tag-out procedures.
- Working on energized circuits without an energized hot work permit.
- Physical altercations, or any sort of harassment (investigated).
- Smoking within any structure or outside the designated smoking area.

It is impossible to publish every safety rule to cover every circumstance. However, if workers fail to follow safe work practices not covered by this policy, disciplinary actions will be assessed based on Samet Corporation's assessment of the violation.

SUBSTANCE ABUSE POLICY

This project is committed to providing a safe, drug free workplace for all employees. This policy applies to all Samet Corporation contractors, vendors and other third-party employees.

The use, sale, offer to sell, purchase, and transfer, distribution, or possession of drug paraphernalia, any detectable amounts of alcohol or illegal drug, firearm, or other dangerous weapons by any employee on this project is prohibited. Each contractor will promote a Drug Free Workplace with their employees and communicate during the safety orientation what constitutes prohibited activities. Every worker involved in an incident shall have a post incident drug/alcohol test performed within three (3) hours after the incident. Any worker on the project site who is reasonably suspected of being under the influence of alcohol or a controlled substance shall be tested. Contractors are responsible for having their workers tested at an approved facility and reporting the results to Samet. Any worker that refuses to test, stall to be tested, are uncooperative with collectors, or attempt to alter a urine specimen will be considered positive and immediately removed from the project.

SAFETY PLANNING

Job Hazard Analysis (Completed by Contractor Superintendent and Project Manager)
Prior to starting work on this project, each contractor will submit a written Job Hazard Analysis (JHA) for their scope of work. The JHA can be included in the Site-Specific Safety Plan. The JHA must identify and outline each work component or activity, list the potential safety hazards, risk/severity assessment and health hazards associated with each activity. It must also describe what safety controls, PPE, tools and equipment will be implemented and required to mitigate the recognized hazards and safely complete each activity.

Pre-Task Safety Planning (Completed by Contractor Foreman or First Line Supervisor)
Each Foreman, designated supervisor and/or workers will analyze each task to be performed by scope of work and identify the work sequences, hazards, and controls necessary to protect workers from the identified hazards. Our hierarchy of controls must be observed. The Pre-Task Safety Plan (PTP) will be communicated daily to each crew performing work on this project. Each employee will sign the PTP acknowledging the safety procedures while engaged in the task. In cases of a changed construction activity, the employee or contractor's competent person must assess the change(s), retrain his employees and document that re-training in his daily pre-task safety plan and field report.

2 Minute Drill -throughout the day, each worker should run the 2 Minute Drill to help prevent any potential accidents.

SAFETY INSPECTIONS

Each Contractor performing work will be responsible for conducting weekly safety inspections of their work area, tools and equipment (daily). The following inspections will be required as applicable to ongoing work activities. Safety forms or permits can be obtained from project team.

General Daily Worksite Safety Inspections (weekly documentation Required)
Each contractor will perform a visual general safety inspection of their work area where their employees and subcontractors are working daily. Subcontractor's competent person will use their daily pre-task safety plan when assessing the potential hazards utilizing

a hierarchy of risk control. Safe work practices and physical hazards must be verified while conducting inspection of their work areas. Samet weekly Worksite Safety Inspection form or equivalent form must be used to document these inspections and the competed corrective actions

Daily Inspections
Contractors using the below equipment or performing the specific type of work will designate a competent person to inspect and document each day prior to use.

Scaffolds, trenches, cranes, forklifts, aerial lifts, material handling and hoisting equipment, rigging, ladders and hand and power tools.

Notes: All rigging equipment shall be inspected and certified by contractor prior to use and as a minimum monthly.
A visible inspection tag must be used for scaffolds and mechanized equipment.
Each contractor who requires their employees to wear personal fall arrest systems (PFAS) shall inspect harnesses and lanyards as required. Workers engaged in steel working activities shall inspect harnesses and lanyards daily. All others shall inspect harnesses and lanyards monthly (or as required by manufacturer), color code or tag them to indicate current inspection.

SAFETY TRAINING

Safety and health training are a requirement and mandatory for all and contractor workers assigned to this project to promote and ensure that an incident and injury free environment exists.

Safety Orientation:
All project management, supervisors, and workers shall attend site-specific safety orientation training and will be allowed to start work until they have attended.

Upon conclusion thereof, all personnel will be given a hard hat sticker verifying that they have been through the orientation and will, be asked to sign the orientation summary and the Samet "I am Committed to Safety For" sign.

GENERAL SAFETY GUIDING PRINCIPLES

Clean and safe working conditions are essential for achieving an Incident and Injury Free Environment. Everyone must maintain a strong personal desire to think and act safely.

The following Safety Guiding Principles will be used to guide all work activities on this site and to help foster a culture of ensuring that all workers go home safely to their families each day.

- Everyone is responsible for safety and health -
- We look out for each other –
- Safety is planned into our work –
- All injuries are preventable –
- All deficiencies will be resolved immediately –
- Management is accountable for preventing injuries –
- Everyone must be trained to work safely & healthfully –
- Working safely and healthfully is a condition of employment –
- We measure safety performance –
- React to incidents, not just injuries –
- Off the job safety is as important as on the job safety
- Every worker has 100% Stop Work Authority (SWA)

EMERGENCY ACTION PROCEDURES

A site-specific emergency action plan (EAP) will be written, and all subcontractor competent persons will be provided a copy will be discussed during the project safety orientation meeting.

A site-specific emergency action plan (EAP) will be written and maintained in the Samet field office The EAP determines the proper access/egress of emergency equipment and/or personnel into or out of the site in case of emergency.

- Project superintendent will activate EAP using 3 long air horn blasts and/or phone communication to subcontractor competent persons.
- Supervisors will be directed to key locations on the site to assist in an emergency.
- Each employee is expected to follow direction of supervisors and cooperate in any emergency action effort.
- Personnel should evacuate the site in an orderly fashion if instructed to do so by supervisors.
- If you become aware of an emergency or an injury, notify a supervisor immediately.
- Two means of access/egress must be available, identified and unobstructed at all times.

Personnel are strictly forbidden to discuss project conditions, incidents, or emergencies with the media, press or any person not associated with the project.

PROJECT SITE SECURITY

"No Trespassing" signs shall be posted at the project site to prevent casual entry by the public (See Project Signage TSW). All construction traffic and parking will follow Site Logistics plan.

All workers may be subject to Samet Corporation disciplinary procedures for violation of project security measures and will be held under applicable Local, State and Federal laws for any offenses that violate said laws including but not limited to:

- Possession of firearms and other weapons
- Fighting or horseplay.
- Being on project while under the influence or possession, distribution, or offering for sale of alcohol or controlled substances.
- Theft.
- Smoking in unauthorized areas.
- Negligent damage of owner's property or the property of contractors or employees.

FIRST AID POLICY

In the event an employee is injured on the job, first aid kits are available for the employee to treat their own injuries. First aid kits will be in the vicinity of the work area and contents of the kit inspected when brought on site. Subcontractor Foreman will notify project superintendent or his representative if employees use first aid items. In the event of a serious injury, 911 will be called.

No employee is required to treat another's' wounds. However, in the event "Good Samaritan" assistance is rendered, the exposed employee and victim will be evaluated by a medical clinic or doctor for Blood Borne Pathogens exposure control within 24 hours. The exposed employee will receive general blood borne pathogen training pursuant to OSHA 1910.1030 requirements.

HEAT STRESS

Work involving high air temperature, radiant heat sources, high humidity, direct physical contact with hot objects or strenuous physical activities have a high potential for inducing heat stress in workers engaged in construction activities.

Workers should consume adequate liquids and take necessary rest breaks to help prevent heat disorders. Water is recommended over carbonated beverages or sport drinks like Gatorade.

Heat Disorders and Health Effects

Heat stroke: Occurs when the body temperature rises to critical levels, Heat stroke is a medical emergency. Do not send worker home or leave unattended.

Heat Exhaustion: Symptoms often are non-specific and may be sudden in onset. These symptoms often resemble a viral illness. It is caused from dehydration where a large loss of body fluid causes a slowing of the circulatory system.

Heat Cramps: Usually caused by performing hard physical labor in a hot environment. They are caused from an electrolyte imbalance or by too little or too much salt.

HAZARDOUS COMMUNICATION/SDS

All contractors will submit their hazardous communication program and SDS to the Samet team prior to the start of work. Each contractor must supervisor employees under his direct supervision for proper training and proper precautions prior to the hazardous chemical's introduction to the jobsite. The following information will assist in understanding OSHA Hazardous Communication requirements:

List of Hazardous Chemicals
The team will maintain a master list of all hazardous chemicals on the project. This list will be in the trailer and available for all employees upon request.

Safety Data Sheets (SDS's)
Each contractor must have ready access to the SDS for all chemicals they bring to the project site.
Labels and Other Forms of Warning
Each contractor will ensure all containers on the site have proper, up-to-date labels.

Training
Each contractor is responsible for the proper training of their employees.

Contractor Employees
Project team will advise contractors of location of hazardous chemical inventory list during the safety orientation.

Each contractor bringing chemicals onsite must provide a copy of their written Hazardous Communication Program including all SDS's to Samet team prior to mobilization on the jobsite.

Community Right to Know
Each project location will cooperate with city and county officials to comply with requirements of the OSHA standards regarding hazardous materials onsite.

FALL PROTECTION

All individuals will take all practical measures to eliminate, prevent, and control fall hazards. All work will be planned with the intent to eliminate identified and potential fall hazards. Samet Corporation's fall protection policy and OSHA 29 CFR 1926.500 Subpart M govern the requirements to protect workers exposed to falls. Additionally, Samet Corporation's fall protection policy is 100% fall protection when exposed six (6) feet or greater above a lower level. The use of conventional fall protection systems (passive preferred) shall be utilized to protect workers from falls to lower levels. Workers wearing personal fall arrest systems shall not free fall more than six (6) feet or contact a lower level.

A written fall protection and prevention plan, including a rescue plan as applicable, may be required as deemed necessary by Samet Corporation. Contractors engaged in the following shall submit their fall protection plan for approval prior to beginning work on site: Steel erection, concrete (cast in place), wood framing, dry laid masonry wall (segmented), pre-cast concrete walls, tilt-up concrete walls, and roofing work. The plan must be agreed to prior to beginning work and the designated competent person must enforce said plan.
Acceptable fall protection systems include the following conventional systems: guardrails, safety netting, floor and wall hole covers, positioning device systems, fall restraint systems, protection from falling objects and personal fall arrest systems.
*****Safety monitoring systems as part of a warning line fall protection system is prohibited.*****

Workers exposed to fall hazards shall be uniformly equipped, trained, and given periodic refresher training in fall protection at specific intervals to minimize the adverse effects of accidental falls. Fall protection training records will be maintained on the project and available for review by Samet Corporation.

Flat Roof fall protection program: Warning line systems:
There are times when a warning line is necessary. The roofers shall place the warning line as close as six (6) feet from the edge. For the other trades working on a roof the warning line must be 15 feet from the edge.
Anyone outside of the warning line system is required to wear personal fall protection.
Personal fall arrest systems will be required for workers on ladders when the following conditions are present:

- center of worker's body is outside the side rails of the ladder,
- ladder is positioned such that its distance to a leading edge or open-sided floor is less than the working height of the ladder, plus 6 feet.
- 3 points of contact cannot be maintained when climbing,
- Competent Person evaluation of conditions, working greater than 6 feet above a lower level and tying off does not create an additional hazard on the ladder.

High Rise Construction

In order to ensure fall hazards (people/materials) are effectively mitigated additional controls will be required in the following areas;

- Full heigh netting enclosure will be required on all elevator shaft openings and around the perimeter in any areas over construction activities or adjacent to public interface. All temporary perimeter protection systems must be protected with debris netting.
- Cantilevered catch netting system rated for people/debris must be installed around the entire building perimeter and must be cycled to stay no more than 3 levels (approximately 30' feet from working deck)
- Ground level building footprint will be protected by physical barriers (similar to the perimeter protection provided on elevated floors) and overhead protected entrances provided.
- Tool tethers must be utilized when working within 10 feet of any leading edge not fully enclosed or on any exterior elevated platforms (suspended scaffolds, boom lifts, etc.)
- Material hoist landing enclosures will offer floor to ceiling protection to prevent any accidental interaction with the hoist way.

General fall protection requirements:

Any task or activity involving work at heights must be carefully planned and communicated with all involved. Effective controls must be implemented to protect people/tools/materials from falling distances equal or greater than 6 feet.

Any contractor that creates a floor hole or penetration larger than 2 inches will be responsible for protecting that opening and properly marking it with the words "HOLE-DO NOT REMOVE" or "COVER-DO NOT REMOVE" in languages that the workers speak most prevalently.

SCAFFOLDS AND AERIAL LIFTS

All Contractors shall identify a Competent Person responsible for the erecting and dismantling of all scaffolds according to OSHA regulations (29 CFR 1926 subpart L- Scaffolds) and Codes of Safe Practice (Scaffold Industry Association). Records will be maintained for scaffold training and be available for review by Samet Corporation team. The Competent person shall submit to Samet Corporation Superintendent or his representative a fall protection plan for erecting and dismantling scaffolds.
Employees working on scaffolds 6 feet above a lower level shall be protected from falling by either a standard guardrail system or personal fall arrest system. Any use of a personal fall arrest system used on a scaffold shall be approved by Samet Corporation team and Samet Corporation EHS Director. The subsequent specific scaffold requirements shall be followed:

- All scaffolds shall be erected under the supervision of a competent person and inspected daily. Scaffold tags or equivalent shall be used to document the inspection. Green Tags - Approved ready for use. Yellow Tags - Caution if restrictions are required. Red Tags – Scaffold unsafe do not use. Narrow span scaffolds (Baker scaffolds) are required to be inspected and tagged.

Aerial Lifts

- All contractors are required to ensure that their workers are properly trained in the use and operation of aerial lifts, including any manufacturer specific requirements and OSHA requirements of 29 CFR 1926 subpart L.
- Workers must wear their personal fall arrest system while working on any mobile elevated working platforms.

PERSONAL PROTECTIVE EQUIPMENT

All personal protective equipment (PPE) shall meet applicable standards of the American National Standards Institute (ANSI), American Society for Testing and Materials (ASTM) and properly used in accordance with the manufactures' recommendations. Each employer shall furnish their employees approved PPE that fits to size and provide training in the selection, use and care of such, retraining to be performed as necessary. Employees must maintain their PPE in good sanitary conditions, if defective or showing signs of excessive wear PPE must be replaced. All persons entering the jobsite will, as a minimum, wear the following personal protective equipment at all time in the designated work area while on this project (except in office and lunch areas). At no times during the project will PPE requirements be relaxed.

Head Protection
An approved hard hat must always be worn.

Eye and Face Protection

- Safety glasses (Z87.1) with side shields must always be worn.
- Workers that wear prescription safety glasses may do one of the following:
    - Obtain prescription safety glasses (Z87.1) with rigid side shields.
    - Wear over- the- glass safety glasses.

In addition, the following eye/face equipment must be worn when performing the following work activities:

• Arc welding	Welding hood with proper shading*.
• Burning	Burning goggles with proper shading
• Grinding or cutting metals	Face shield*
• Drilling (rock)	Face shield*
• Chemical handling	Face shield*
• Molten materials	Face shield*
• Corrosive liquids	Face Shield*
• Concrete pouring	Face Shield*

Note: * Safety glasses will be worn in conjunction with face shields and welding hoods.

Foot Protection
Above the ankle hard soled work boots or shoes that are in good condition must always be worn. Safety toed work boots if worn must conform to ASTM F2412-05 & ASTM F-2413-05.

Work attire

- Shirt sleeves will have a minimum length of 4 inches. No shorts, tank tops, or cut-off shirts are permitted.
- All personnel shall wear a reflective vests or high visibility clothing while in the designated work zone. During the hours of dusk to dawn ANSI class II reflective vests or clothing shall be worn.
- Long pants that fit properly around the waist and of a proper length so as not to create a trip hazard
- Long hair must be contained so as not to create a hazard of getting caught.

Respiratory Protection
All contractors are required to determine if hazards exist that require respiratory protection. If so, the Competent Person must submit a plan to the Samet team prior to the start of work. Respiratory protection would be required if OSHA permissible exposure limits are exceeded, and no means of engineering controls could be used. Subcontractor would be responsible for determining the exposure level by sampling for airborne contaminates.
When respiratory protection is required, the employer must establish a comprehensive respiratory protection program, as outlined in OSHA's Small Entity Compliance Guide for Respiratory Protection and as required in the OSHA respiratory protection standard [29 CFR 1910.134 and 1926.103].

Use of Respirators
As the primary means of preventing or minimizing exposures to airborne contaminants, use effective source controls such as substitution, automation, enclosed systems, local exhaust ventilation or wet methods.

Hearing Protection
Approved hearing protection will be worn as specified in posted areas and while working with or around high-noise level

producing machines, tools, or equipment. A good rule to follow is: When you must raise your voice to be heard, you need hearing protection. Exposure to impulsive or impact noise must not exceed 140dB noise level.

Hand Protection

Workers will wear appropriate level of hand protection as necessary and as determined by the Competent Person to prevent hand and finger injuries.

Additional Protections

Specific activities may require that additional personal protective equipment be worn such as working on energized circuits. Contractors and their Competent Persons shall evaluate the need for additional protection based on their pre-task safety plan.

Hand and Power Tools

All hand and power tools will be operated, kept in good condition and regularly maintained per manufacturer's recommendations. Workers working 6 feet or greater above a lower level while using handheld tools and or power tools that may be subject to dropping shall be tethered or area barricaded to prevent tool from hitting unsuspected workers below.

HOUSEKEEPING AND ORDERLINESS

All persons shall always maintain their work locations in an orderly and clean manner. Daily cleanup of work areas is mandatory for all trades on site. Subcontractor competent person shall submit a housekeeping plan to project team prior to starting work.

Samet Corporation Cleanliness Standard

Dumpsters for general trash, construction debris (wood, metal, concrete and etc) and recycling dumpsters will be provided pursuant to contract requirements. Contractors shall provide trash containers on site for general trash and debris. All miscellaneous trash generated by workers shall be deposited in a container or in the back of pickup trucks daily. Do not throw bottles, food wrappers, cups or any other types of trash on the floor or ground. When containers are ¾ full, they will be either removed from the site or dumped in a large metal dumpster. Contractors, as required by contract, will provide their own dumpsters for their specific excess materials and allocate adequate resources to ensure this housekeeping standard is maintained throughout their time on the project. Project team shall address this housekeeping standard with all subcontractors prior to beginning work.

General Housekeeping Requirements:

Housekeeping is an important part of our daily work. All materials, equipment, etc. brought on site shall be organized and stored in areas designated by Samet project team. Trade partners are responsible for organizing material, equipment, and tools so they do not create tripping hazards or impede/block exits. Trade partners are responsible for daily clean up of excess material and debris which shall be deposited in appropriate containers throughout the day. When work is completed in a room or area all excess material and debris shall be removed and broom cleaned.

Refer to Samet's "Housekeeping Commitment Agreement" as provided by the project team

LADDER SAFETY

Samet Corporation requires all portable ladders to be rated heavy duty Type 1, 1A, or 1AA. Type II or Type III Ladders (<225 Lbs.) and all types of aluminum ladders are prohibited. Job made ladders shall comply with ANSI A14.4 1979 and 2009 as well as OSHA 29 CFR 1926 Subpart X. Contractor Competent Person shall evaluate the use of personal fall protection systems while on ladders greater than 6 feet above the finished floor the ladder sits on.

Refer to manufacturer's specifications for the proper use of all ladders.

ELECTRICAL SAFETY

The following regulations apply to both temporary and permanent electrical installations used on this Project site. Electricians working on exposed live (50 to 280 volts) parts shall wear the appropriate level of personal protective equipment required under NFPA 70e and as designated by the Competent Person.

- Extension cords used with portable electrical tools and appliances shall be #14 AWG or greater and be three-wire type designed for hard or extra-hard usage. Grounds are never to be removed from the extension cords.
- All flexible cords plugged into a generator with an output of 5KW or greater and all flexible cords plugged into the permanent wiring of the building shall be protected by a ground fault circuit interrupter (GFCI).

- Any replacement plug ends installed on flexible cords shall be UL/FM approved for its intended use. Note: Open construction sites are considered wet locations. UL/FM approved water-resistant replacement plug ends would be acceptable.
- Temporary lights shall be equipped with guards to prevent accidental contact with the bulb. "Red" bulbs will be used to designate exit ways. Temporary lighting circuits shall be permitted within cable assemblies, or within multi-conductor cord or cable of a type identified for hard usage or extra-hard usage.
- Electrical and extension cords or cable are not to be laid on floors, in walkways, etc., unless it is impractical to do otherwise. They should be suspended or protected in such a way as not to block or hang in walkways, doorways, or work areas.
- It is Samet Corporation policy that electrical panels shall be de-energized and locked out prior to being worked on. However, if any work on energized circuits is required with panels removed an "Energized Work Permit" and safety plan shall be submitted and reviewed by Samet project team and EHS Director. Compliance with NFPA 70E is mandatory. PPE requirements shall comply with NFPA 70E Hazard Risk Classification Table 130.7 (c)(9) and 130.7 (c)(10).
- A weekly cord roll-up program is required on this project. This includes cords of every type, not just extension cords.

TRENCHING & EXCAVATION SAFETY

The following regulations apply to all trenching and excavation activities on this site: OSHA CFR 1926, Subpart P.

- Any contractor engaged in trenching operations deeper than 5 feet shall designate a Competent Person and inform Samet Corporation team.
- Underground utilities must be located.
- Trenches or excavations greater than 5 feet in depth will be sloped, benched, or otherwise protected from cave-ins as determined by the Competent Person. Sloping, benching or other protective systems are recommended for any trenches and excavations over three (3) feet in depth.
- Protective systems designed to be placed in trenches such as trench boxes must have tabulated data available for review as necessary.
- Spoil piles and other materials will be placed a minimum of 2 feet from the edges of all trenches and excavations.
- In trenches deeper than four (4) feet, locate means of egress, such as ladders or steps or ramps (45-degree slope), so they are no more than 25 feet of travel from anyone in trench.
- The Competent Person must inspect all trenches daily before work begins and after every rainstorm or other hazardous conditions.
- A registered professional engineer must design all excavations and protective systems over 20 feet in depth.
- Completion and acceptance of Samet's "Underground Utility Excavation Permit/Checklist" is required for each trench.

UNDERGROUND UTILITY LOCATIONS

Any contractor who digs a trench or excavation shall call the State appropriate 811 service. Before digging, be sure that all utilities have responded to your locate request. The 811 representatives will advise you of the member utility owners notified. It is the responsibility of the caller (the contractor responsible for excavation) to contact a utility locating company to have any private lines located.

A copy of the 811-notification form shall be submitted to Samet Corporation team as part of the completion and acceptance of Samet's "Underground Utility Excavation Permit/Checklist".

Private or third-party independent locate is required if 811 Service isn't available in the location where the excavation will be occurring.

CONFINED SPACE

The following regulations apply to all confined space activities on this site: OSHA CFR 1926.1201.

Samet Corporation team along with contractor's Competent Person will identify all confined spaces on the project. Confined Space in Construction shall abide by all the requirements of the standard. Specific requirements for work in a confined space shall be attached as an amendment to this SSSP. As a minimum before work starts at a project site, each contractor must ensure that a Competent Person identifies all confined spaces in which one or more of their employees it directs may work, and identifies each space that is a permit space, through considerations and evaluation of the elements of that space, including testing as necessary. Samet Corporation policy is that all confined spaces by definition as indicated in 29 CFR 1926.1201 will be reclassified as a non-permit confined space based on 1926.1203(e)(1)(i-vi). Contractor's Competent Person shall submit to Samet Corporation team a confined space entry permit indicating its reclassification as a non-permit confined space. In the event a confined space can't be reclassified as a non-permit space,

all requirements under 1926.1203(a-d) shall be followed. Samet Corporation team is required to coordinate confined space rescue with local fire department in absence of on-site rescue procedures.

FIRE PROTECTION AND PREVENTION

Fire Protection

Temporary fire protection measures, such as fire extinguishers, temporary hose lines, and temporary standpipes are required near hazardous locations and as required by OSHA regulations 29 CFR 1926 Subpart F.

- Fire extinguishers will be the primary means for fire protection and must be located within 75' feet of travel distance from any point within any structure under construction, although other means may be added.
- Any discharge of a fire extinguisher must be reported to Samet Corporation team.
- All enclosed buildings under construction shall have appropriate number of fire extinguishers rated not less than 4A-40B:C (10 lbs. ABC) and not less than 2A-20B:C (5 lbs. ABC) for motorized equipment.
- All temporary buildings (shops, field offices, locker rooms, etc.) will have a class ABC fire extinguisher rated not less than a 2A-10B:C
- All spark producing, welding, cutting or flammable storage operations shall require the fire extinguisher rated not less than 4A-40B:C (minimum 10 lbs. ABC Fire extinguisher) be approximately 25' from operations.

Fire Prevention

Combustible refuse from construction operations will not be burned or dumped anywhere on the construction site. Such refuse will be removed at frequent intervals, as required. Storage of large quantities of construction debris will be placed in metal dumpsters.

Compressed gasses will be:

  - Stored with valve caps securely fastened when not attached to a regulator.
  - Always secured upright, including when transported in vehicles.
  - Fuel and oxygen cylinders will be separated by 20 feet for greater when not in use or separated by a not less than a 5' fire rated (one-half hour) wall.
  - Empty cylinders shall be stored separate from full cylinders.
- Oily rags and waste are to be stored separately in metal containers fitted with self-closing lids.
- **Smoking shall not be permitted inside any structure**, only permitted in designated smoking areas.
- **Smoking areas shall be delineated with physical barriers, with proper signage, have a 4A-40B:C (10 lbs. Fire Extinguishers) and safe receptables for smoking materials disposal**.

Flammable Liquid Storage and Dispensing

Flammable liquids will be:

- Stored outside and no closer than 20 feet of any structure or inside a properly constructed storage container.
- Stored in approved metal safety cans and marked to indicate its contents.
- Not more than 25 gallons stored inside any trailer or building.
- Posted with "No Smoking" signs.
- Outside storage areas kept free of other combustible materials.
- Gasoline or diesel storage tanks will be double walled and protected from contact by mechanized equipment.
- At fuel dispensing points, the following is required:
  - Fire extinguisher rated not less than 40 B-C located within 75 feet of fueling point.
  - "No Smoking" signs posted.
  - Self-locking fuel nozzle prohibited.
  - Spill kit stored nearby.

HOTWORK PERMIT REQUIREMENTS

A Hot Work Permit is required for any temporary operation involving open flames or producing heat and/or sparks. This includes, but not limited to brazing, flame cutting, grinding, soldering, torch applied roofing and welding. Hot work permits will be issued by Samet Corporation team and will filled out by contractor engaged in hot work operations in an enclosed building/structure.

- All provisions of the Hot Work Permit will be followed including fire watch personnel. Hot Work Permits can be issued for the duration of the hot work but not to exceed the work shift.

- Hot work operations will be minimized or eliminated by selection of safer means methods whenever possible (example; utilizing hydraulic cutters/shears vs flame torches)
- ***Refer to Samet's PtW – Hot Work Permit***

EQUIPMENT AND VEHICLES

- Heavy equipment (cranes, forklifts, dump trucks, excavators/backhoes, man-lifts, etc.) used on this project will be inspected prior to use and comply with applicable OSHA and ANSI standards as well as manufacturers documentation.
- Seat belts shall be worn on all equipment with roll-overprotective structures.
- Windshields will be free from cracks or other visible damage.
- Vehicles and equipment with an obstructed view to the rear must have an audible backup alarm or a flagman must be used.
- No equipment or vehicle will be used to transport personnel unless it is specifically designed to do so.
- Equipment operators are responsible to check their equipment daily to verify it is working properly.
- Equipment operators will possess the required training, certification, and licensees as required by law for the equipment that they are required to operate. All forklift operators shall have a valid operator's license, a copy of which must be submitted to Samet Corporation team.
- If operating a forklift, backhoe, or similar piece of equipment in a public ROW, a valid State driver's license is required and must be on file with Samet Corporation team.

CRANE SAFETY, RIGGING AND HOISTING OPERATIONS

Any contractor who uses a crane on this Project Site shall adhere to the requirements of 29 CFR 1926.1400 Cranes and Derricks in Construction and ASME B30. **All crane operators shall fill out Samet Pre-Erection/Assembly Crane Analysis and provide required documentation such as annual inspection certification, operator's license, and signalman training.**

Each qualified crane operator will be responsible to conduct a detailed daily inspection of its crane and ensure findings are properly logged in a written daily report and reported to crane supplier and Samet.

Mobile Cranes

- No crane will be brought onto the project without a current annual inspection and applicable load charts.
- Crane operators will perform daily crane safety inspections. Crane operators are to turn in the Daily Crane Safety Checklist to Samet Superintendent. A Daily Safety Crane Checklist is provided in the Appendix to this manual. Note: An equivalent form may be used.
- All cranes will be equipped with an anti-two block device. Hooks will be equipped with safety latches.
- Contractor's supervisor shall designate a qualified person to monitor all rigging. All rigging will be inspected daily and before each shift. A Daily Rigging Safety Inspection Checklist is provided in the Appendix to this manual.
- The crane manufacturer's operating manual, instructions and load charts for a specific crane will be used to determine the safe operation of all cranes.
- All crane operators must be certified by the National Commission on Certification of Crane Operators (NCCCO) or equivalent. This rule applies to Contractors as well as Samet employees. Exception: cranes mounted on delivery trucks that unload outside, onto the ground.
- The supervisor shall ensure that crane operators meet legal and Owner requirements. After initial qualification, the supervisor shall closely monitor until the operator's capability is established.
- The ground where the crane will be set up must be solid and able to support the weight of the loaded crane. Determine if underground utilities exist near where the crane will be set up.
- Cranes will be set up level with outriggers fully extended or set per the manufacturer's recommendation for particular lift configuration. All tires should be clear of the ground.
- Cribbing or mats under outrigger pads should be of sufficient size and properly placed to ensure adequate soil bearing.
- Tag lines shall be used when needed to control the load. (Exception: When loading and unloading trucks)
- The entire swing radius of the rear rotating superstructure of all cranes must be barricaded to prevent crushing injuries.
- The load path shall be barricaded to protect worker from overhead hazards.
- Loads shall be routed to minimize exposure to workers.

- Before a lift, determine the load weight and load capacity. A designated qualified person will determine the load weight. Refer to the shipping weight or have the equipment or machinery assembly weighed. Calculate all structural loads and determine the center of gravity.
- Position the crane so there is a minimum swing and load path clearance of two feet. Cranes and their loads shall not be operated within 20 feet of electrical lines. Increased clearance is required for higher voltage lines. When working near electrical sources (overhead lines or lightning), the crane should be grounded.
- Crane operators are to know the weight of the load they are lifting.
- A written critical lift and rigging plan are required for any lift where:
  - The load is greater than 75% of the crane capacity as configured for the lift.
  - Two cranes are used.
  - The Project Manager/Superintendent or Safety Director determines the lift to be non-routine.
  - Lift plans are required for all project hoisting operations not taken plan of regular basis.

Tower Cranes

- Tower cranes must be fitted with limit switches and alarms when operating in close proximity to other tower cranes (and other equipment), public interface and any other structure that could compromise safe operations.
- Cranes must be installed, erected, adjusted, climbed, inspected, maintained and dismantled in accordance with the manufacturer's requirements. Detailed planning must be submitted for Samet's review at least two weeks prior to performing activity.
- Tower cranes require a competent engineer to design the crane base; complete any interim checks during installation; provide approval for the crane to be installed; and provide written confirmation that the base is fit for purpose.
- Tower crane base must be secured with 6 feet barrier (fence or rigid wood partition) with lockable gate and signage to prevent unauthorized access during non-working hours.
- Tower base must be kept free of debris and standing water. Any excess power cords must be rolled up and elevated.
- Effective measures must be implemented to prevent cranes coming into contact with overhead power lines or underground services, other cranes, equipment or structures. Crane to crane communication must be established between any cranes (or other equipment) that could be operating within physical reach of one another. Daily operators' coordination required.
- All Tower cranes have to be equipped with a functional Safe Load Indicator (LMI) at all times.
- Tower cranes must be inspected and deemed operationally safe by a qualified technician after any relevant weather-related event (hurricanes, major storms, earthquakes, or lightning strikes) any incidents and major repairs.
- Third party inspection required after initial erection (for both Tower Cranes and Material/Personnel hoists). Samet will coordinate and hire in a third-party inspector to ensure Tower Crane has been installed, erected, inspected/maintained in accordance with manufacture's requirements and industry standards.
- Fatigue management – Operators normal operating hours must not exceed 12 hours shift. Only under extreme circumstances exceeding shift duration should be allowed.

Rigging

- Special attention needs to be taken when wind speeds exceed 20mph. Such lifts will only be made at the discretion of the crane operator, project superintendent and safety director and must follow Crane manufacture's recommendations. Lower crane booms/raise hook when appropriate due to high winds.
- All loads to be slung, lifted, or transported must have no uncontrolled movement or loss of the load. This can involve redundant slinging or secondary containment for small objects.
- All lifting gear and tackle (e.g., chains, wire ropes, kibbles, slings and rubbish removal skips) must be inspected before use and must be structurally sound, fit for purpose and designed for lifting (with certified lifting points and the rated capacity/safe working load clearly displayed).
- Tag lines shall be used when needed to control the load.
- Objects transported through site must be adequately restrained to prevent uncontrolled movement forwards, rearwards, upwards or sideways.
- Slinging methods must manage any expected dynamic load forces (e.g. wind, sudden crane halt).
- Deliveries where the load has the potential to fall/roll when unshackled must be inspected by a Competent Person, i.e. Rigger/Signal Person or equivalent and restrained before removal, e.g. chocked or slung with hoisting/lifting gear.
- The requirement for exclusion zones for lifting/hoisting operations must be identified and included in the crane lifting plan or PtP.
- All riggers must possess a valid qualification card and identifiable at all times (e.g. different color vest with Rigger identification) or hardhats)

- Proprietary Loading platforms are preferred (Prestonbox Type) when utilized by multiple trade partners. All platforms must be engineered, load capacity posted, enclosed on all sides and equipped with means of controlling access to the platform.

Signalman Training and Qualifications

Employers of signalmen shall ensure that each signal person meets the qualification requirements contained in 29 CFR 1926.1419 Signals – General Requirements.

- Know and understand the type of signals used. If hand signals are used, the signal person shall be designated in writing and know and understand the standard method for hand signals.
- Be competent in the application of the type of signals used.
  Have a basic understanding of equipment operations and limitations, including the crane dynamics involved in swinging and stopping loads and boom deflection from hoisting loads.
- The crane operator, signal person shall be able to effectively communicate the language used.
- The signals used (hand, voice, audible, or new) and means of transmitting the signals to the operator (such as line of sight, video, radio, etc.) shall be appropriate for the site conditions.
- If radios are used to signal crane operator radio must have a dedicated channel.
- Hand signal charts shall be either posted on the equipment or readily available at the site.
- A crane operator should always move loads according to the established code of signals and use a signaler. Hand signals are preferred and commonly used.
- Only a qualified person should give signals to the crane operator.
- There should be only one designated person at a time giving crane signals.
- A crane operator should move loads only on crane signals from one person.
- A crane operator must obey STOP signals no matter who gives it.
- The person giving crane signals must be in clear view of the crane operator.
- The person giving crane signals must have a clear view of the load and the equipment,
- The person giving crane signals must keep persons outside the crane's operating area. Any request or questions should be addressed to the signaler.
- The person giving crane signals should never direct a load over a person.

DEMOLITION

- Demolition plans shall follow OSHA 29 CFR 1926 Subpart T.
- Prior to start of any demolition work, an engineering survey of the building or area to be demolished is required to determine the condition of the area. Debris and material shall not be dropped through walls, floor holes, windows, or other elevated work areas without the area below being barricaded and proper signs posted.
- Debris chutes shall have a substantial gate at all elevated openings.
- Samet Corporation may require the demolition contractor to submit a site-specific fall protection plan if the work requires the removal of exterior walls and or flooring.

CONCRETE AND MASONRY

- Free standing masonry walls over eight (8) feet in height will be adequately braced to prevent collapse. Limited access zones will be established as required by OSHA 1926, Subpart Q, to protect workers from the hazards associated with collapsing masonry walls.
- All rebar dowels, electrical conduits or similar items which are considered a “potential impalement hazard” shall always be capped (protected). This includes vertical and horizontal impalement hazards.
- Refer to Section on SILICA for specific requirements.

Pre-Cast Concrete

- The inspection and supervision of all rigging and hardware must be performed by a Competent Person.
- Never move pre-cast members over another worker.
- 100% fall protection is required of all workers involved in the setting or connection of pre-cast members
- No workers will use their hands to reach under a pre-cast member to adjust a shim or bearing pad.

STEEL ERECTION

The steel erection contractor shall submit a written steel erection plan to the Samet Corporation team prior to any work being performed. The plan must be comprehensive and include all aspects of the erection process, including but not limited to storage/staging of materials, equipment for hoisting materials, routes for lifting operations, critical lifts, rigging procedures, connection procedures, erection bridging procedures, stability requirements, fall protection requirements, decking procedures and proper training of workers. Steel erection procedures shall follow OSHA 29 CFR 1926. 750 Subpart R – Steel Erection standard or any supplemental requirements required by Samet Corporation. The following requirement shall be incorporated into the plan:

- 100% continuous fall protection for heights six (6) feet or greater above a lower level. Workers engaged in steel erection activities to include connecting, bolt-up and decking are **not exempt** from the project's 100% fall protection requirements.
- During skeletal steel erection, a tightly planked temporary floor shall be maintained within two (2) stories or thirty (30) feet, whichever is less, below and directly under that portion of each tier of beams on which any work is being performed.
- During structural steel assembly, a safety railing of wire rope (at least 3/8" dia.) or equivalent shall be installed. Top railing should be forty-five (45) inches and a mid-railing at twenty-two (22) inches above the deck along all open sides including stairway landings and elevator shafts. The railing must support two hundred (200) lbs. of downward force and not deflect below thirty-nine (39) inches and shall not deflect outward beyond the edge of the floor. Flagging must be placed no more than every six (6) feet apart using a hi-visibility material.
- When placing structural steel members, the load shall not be released from the hoisting line until the member is secured by at least two bolts or the equivalent at each connection, drawn up wrench tight.

MOLD CONTROL

If mold is observed, work must not continue in the area until Samet Corporation supervision has made an evaluation of the exposure and develop an abatement plan.

SILICA

Contractors shall submit an exposure control plan to Samet team prior to beginning any work. The contractor shall adhere to the requirements of 29 CFR 1926.1153 Respirable crystalline silica. If respiratory protection is required by this section, the contractor shall institute a respiratory protection program according to 29 CFR 1910.134. In addition, contractor shall ensure medical surveillance is available at no cost to employees as required under 29 CFR 1926.1153(h).

- Workers that perform any of the following work tasks will be protected from exposure to crystalline silica dust:
    - Abrasive blasting using silica sand as a blasting medium.
    - Abrasive blasting of concrete regardless of the type of medium.
    - Sawing, hammering, drilling, grinding, sanding or chipping of concrete, rock or masonry products.
    - Heavy equipment and utility vehicles used to fracture or abrade silica containing materials, i.e. rock ripping, grading, demolition, fracturing
    - Dry sweeping or compressed air blowing of concrete, masonry, rock, or sand dust.
- Workers exposed to silica dust will receive training on silica hazards and protection methods.
- Examples of acceptable engineering controls are:
    - Substitute blasting medium for less hazardous material with 0% silica.
    - Dust collection systems shall be equipped with a commercially available shroud and have a filter with 99% or greater efficiency and a filter-cleaning mechanism.
    - Wet saw systems equipped with integrated water delivery system that continuously feeds water to the blade or cutting surface.
    - Wet sweeping, HEPA-filtered vacuuming shall be used to clean up materials and debris where crystalline silica may be present.
- Do not use respirators as the primary means of preventing or minimizing exposures to airborne contaminants. Instead, use effective source controls such as substitution, automation, enclosed systems, local exhaust ventilation, wet methods, and good work practices as indicated in 29 CFR 1926.1153 Respirable crystalline silica.
- Do not eat, drink, or use tobacco products in areas where crystalline silica dust is present. Always wash hands and face before eating, drinking, or using tobacco products.

INSTALLING AND SANDING SHETROCK

This procedure outlines the safety requirements for installing and sanding sheet rock in all buildings under construction.

- While wearing stilts, workers are prohibited from walking up and down stairs or working near leading edges without proper physical protection.
- Workers wearing stilts who are within ten (10) feet of standard guardrails must extend the top rail an additional two (2) feet to ensure proper protection.
- Workers hand sanding sheetrock joints can, on a voluntary basis, wear a disposable respirator (dust mask) rated N95. Workers must be trained and sign Appendix D to section 29 CFR 1910.134 "Voluntary Use of a Disposable Respirator".
- Workers engaged in mechanically sanding (powered orbital sander) sheetrock joint compound shall not be exposed to airborne concentrations of respirable dust above the OSHA permissible exposure level (PEL). Contractor is responsible for determining the exposure level of respirable dust in and around their employees breathing zone. The use of a vacuum attached to powered orbital sanders is the preferred means to reduce respirable dust below the OSHA PEL.
- Workers who would be exposed to respirable dust that is greater than 5mg/m3 in and around workers breathing zone must submit a comprehensive respiratory protection program that complies with 29 CFR 1910.134 if they require their employees to wear respiratory protection when sanding sheetrock joint compound.

LOCK OUT POLICY

This procedure establishes the minimum requirements for the lockout of energy isolation devices whenever maintenance or servicing is done on machines or electrical equipment. It shall be used to ensure that the machine or electrical equipment is stopped, isolated from all potentially hazardous energy sources, and locked out before anyone performs any servicing or maintenance where the unexpected energization or start-up of the machine or electrical equipment or release of stored energy could cause injury.

- Lockout is the preferred method of isolating machines or electrical equipment from energy sources. To assist employers in developing a procedure which meets the requirements of the standard, the following simple procedure is provided for use in lockout programs. This procedure may be used when there are limited numbers or types of machines or electrical equipment or there is a single power source. For more complex systems, a more comprehensive procedure will need to be developed, documented, and utilized.
- All employees and contractor employees are required to comply with the restrictions and limitations imposed on them during the use of lockout. The authorized employees are required to perform the lockout in accordance with this procedure. All employees and contractor employees, upon observing a machine or piece of electrical equipment which is locked out to perform servicing or maintenance, shall not attempt to start, energize, or use that machine or electrical equipment.
- ***Refer to Samet's TSW for LOTO, Verify Permit***

Responsibility

- Appropriate employees (contractor) shall be instructed in the safety significance of the lockout procedure.
- A competent person will conduct a survey to locate and identify all isolating devices to be certain which switch(s), valve(s) or other energy isolating devices apply to the equipment to be locked out. More than one energy source (electrical, mechanical, or others) may be involved.

Lockout system procedure

- Notify all affected employees that a lockout system is going to be utilized and the reason. The authorized employee (contractor) shall know the type and magnitude of energy that the machine or electrical equipment utilizes and shall understand the hazards.
- If the machine or electrical equipment is operating, shut it down by the normal stopping procedure.
- Operate the switch, valve, or other energy isolating device(s) so that the equipment is isolated from its energy source(s). Stored energy (such as that in springs, elevated machine members, rotating flywheels, hydraulic systems, and air, gas, steam, or water pressure, etc.) must be dissipated or restrained by methods such as repositioning, blocking, bleeding down, etc.
- Lockout the energy isolating devices with assigned individual lock(s) and tag(s).
- Ensure that the equipment is disconnected from the energy source(s) by first checking that no personnel are exposed, then verify the isolation of the equipment by operating the push button or other normal operating control(s) or by testing to make certain the equipment will not operate. Return operating control(s) to neutral or "off" position after verifying the isolation of the equipment. The machine is now locked out.

Restoring Equipment to Service

When the servicing or maintenance is complete and the machine or electrical equipment is ready to return to normal operating condition, the following steps shall be taken.

- Check the machine or electrical equipment and the immediate area around the machine or equipment to ensure that nonessential items have been removed and that the machine or electrical equipment components are operationally intact.
- Check the work area to ensure that all employees have been safely positioned or removed from the area.
- Verify that the controls are in neutral.
- Remove the lockout devices and reenergize the machine or electrical equipment.
- Notify affected employees that the servicing or maintenance is complete, and the machine or electrical equipment is ready for use.

CODE OF CONDUCT /WORKPLACE VIOLENCE

Nothing is more important to Samet Corporation than the safety and security of its associates and partners. Threats, threatening behavior or acts of violence against anyone on Company property or projects sites will not be tolerated. Violations of this policy will lead to disciplinary action (up to and including termination) and/or removal from premises.

In carrying out Samet Corporation policies, it is essential that all personnel understand that no existing Samet Corporation policy, practice, or procedure should be interpreted to prohibit decisions designed to prevent a threat from being carried out, a violent act from occurring, or a life-threatening situation from developing.

All workers are responsible for notifying their supervisor and Samet Corporation team of any and all threats or unusual behavior, which they may witnessed, receive or have been told that another person has witnessed or received.

This policy also requires all individuals who apply for or obtain a protective restraining order, which lists company locations as being protected areas to provide such to Samet's Safety Director. Samet Corporation understands the sensitivity of the information requested and will respect the confidentiality thereof.

PROTECTING ASSOCIATES IN THE WORKPLACE

Protecting all Associates' safety and well-being is of utmost importance to maintaining a positive, productive work environment and culture. This commitment includes protecting Samet field and office Associates from harassment, threats, and violent behavior, and extends to our sub-contractors, customers, and anyone present at one of our job sites or offices. Being a good steward of your own personal safety and the safety of others involves knowing the risk factors, reducing any known risks, and taking pro-active approaches to help yourself and others stay safe and free from harassment, threatening or volatile behavior in any form.

Risk factors for working on construction sites:

- Working late at night or early morning hours
- Working during non-daylight hours
- Working alone or with a limited number of co-workers
- Uncontrolled access to a construction site
- Areas of known security concerns
- General construction parking areas
- Areas that cannot be readily seen by others (i.e., apartment units, closets, enclosed spaces)

Reducing the risks:

- Remove yourself from any contentious situation immediately and do not confront the workers or engage in conversation
- Note who the workers are and or what job they were doing
- If harassed in any form, contact your supervisor or a co-worker immediately and then report the incident to Associate Services. If you wish to by-pass your immediate supervisor, you may reach out to Associate Services or any member of the management team.
- Report all safety concerns to a member of Samet's safety team or VP of Administration
- You can raise concerns or make reports without fear of reprisal

Practical tips for helping yourself and others stay safe at work:

- Always be aware of your surroundings
- Inform your co-workers when working alone
- Inform your co-workers when you intend to enter and return from the project site
- Park your vehicle near the construction office and not in the general parking area
- Keep your cell phone handy and ensure it is charged

- Keep phone numbers of project or department team members in your cell phone's favorites file
- Be aware of groups congregated in and around isolated areas
- Do not stay in isolated areas too long
- Keep doors to isolated spaces open
- When possible, position yourself between the door and the person(s) you are with

If you believe you are being harassed either through verbal communication, body language, or gestures, report the incident immediately to your supervisor and Associate Services. Samet will investigate and take prompt action against any worker(s) or individual(s) who harass Associates in the workplace or the general public near a project site. Threats, hostile behavior, or acts of violence against Associates, contractors, visitors, guests, or other individuals by anyone on company property or projects sites will not be tolerated. Violators will be subject to disciplinary action up to and including termination of employment. You may view Samet's full policy on harassment and sexual harassment on SametNet. If you have concerns about the safety and security of a Samet job site or office, please contact a member of our safety team or VP of Administration.

Revision History

June 1, 2016 – Added Silica Requirements (Section XX) and Modified Aerial Lift Requirement (Section XX)
April 18, 2018 – Revised SSSP
March 2020 – General re-write
May 2021 – Revised / Reformatted
June 2022 – High Rise Construction requirements under Fall Protection, Hot Work Requirements updated, Tower Cranes and hoists third party inspections added.
May 2023 – Fire Prevention was updated - No Smoking allowed within any structure, language for designated smoking areas added. Also updated the Fire Extinguisher size to 10 lbs for general purposes and Fire Watch purposes

Site Specific Safety Documents – Required from Trade Contractors

Once a trade contractor has completed Samet pre-qualification requirements and has been pre-qualified, the following project specific documents must be submitted for the project team's review. All documents must be reviewed and accepted prior to commencing site work activities.

Project Name:	**Trade Partner:**

Safe Work Policies & Practices Documents

No.	Item	Submitted/ Reviewed
1	Site Specific Safety Plan	☐
2	Hazard Communications Policy	☐
3	Jobsite Inspection Policy	☐
4	Post Incident Drug Testing Policy	☐
5	Medical Emergency Response Plan	☐
6	Disciplinary Policy	☐
7	Signed Samet Housekeeping Agreement	☐

Hazard Assessment and Mitigation Strategy Documents

No.	Item	Submitted/ Reviewed
1	Detailed Job Hazard Analysis specific to scope of work activities	☐
2	Provide Site Specific Fall Protection /Prevention Plan – Please include specific means for performing work at heights (if applicable)	☐
3	Site Specific Safety Data Sheets (SDS)	☐

Competent Supervision and Proof of Competency

No.	Item	Submitted/ Reviewed
1	Provide Site Specific Competent Person(s) information and proof of competency. *(OSHA 10/30, First Aid/CPR, Scaffold, Excavation, Hazcom etc.)*	☐
2	Site Specific Organizational Chart and Contact Information (include 2nd/ / 3rd tier information)	☐
3	Provide all applicable/relevant proof of training & certifications (proposed crew)	☐

Above required documents required by Samet has been reviewed by Site Team . Samet Site Specific Plan has been provided to Trade Partner. Once above information has been submitted and accepted Trade Partner Crews can submit for Job Specific Orientation. Orientation is required by all work crews prior to any work activities.

Samet Team: _____ **Date:** _____

Trade Partner: _____ **Date:** _____

TRADE PACKAGE SCOPE OF WORK

01A FINAL CLEAN SUBCONTRACT

Furnish all labor, materials, tools, taxes, safety, insurances, equipment, hoisting, cranes, supervision, and all other incidentals necessary to accomplish all **Final Clean** Work in accordance with all Contract Documents and as defined within **Trade Package General Scope Requirements** and this Scope of Work.

Subcontractors/Suppliers performing work on multiple portions of the project site (i.e., buildings, parking area, site, etc.) shall provide separate equipment, hoisting, cranes, supervision including, but not limited to management, superintendent, foreman, tradesman, laborers, etc. for each portion unless agreed to otherwise in writing by the General Contractor. If the project needs and schedule are not being met to the satisfaction of the General Contractor, written approval will be rescinded, and the original staffing requirements shall be provided by the Subcontractor.

Project Specifications for the Appliance Scope of Work are listed below. This Subcontractor or Supplier shall carefully examine all specification sections and drawings within the Contract Documents and be responsible for all work described within this Scope of Work and as required on the project.

PROJECT SPECIFICATIONS

This Subcontractor is responsible for all Division 01 - General Requirements as listed below prepared by the Architect, Design Consultants, and/or General Contractor or as designated elsewhere within the Technical Specifications or Drawings as applicable to this Trade Package Scope of Work.

Primary Responsibility

This Subcontractor is responsible for all Primary Specification Responsibilities listed below unless this Scope of Work specifically states otherwise.

PRIMARY TECHNICAL SPECIFICATION RESPONSIBILITIES (PROJECT MANUAL)	
Gen. Note	**Specifications are included on the Drawings**
01-00-00	Final Clean

Secondary Responsibility

This Subcontractor is responsible for all Secondary Specification Responsibilities listed below to the extent applicable, or defined, within this Scope of Work.

SECONDARY TECHNICAL SPECIFICATION RESPONSIBILITIES	
Gen. Note	**Specifications are included on the Drawings**
Division 03	Concrete
~~Division 4~~	~~Masonry~~
Division 05	Metals
Division 06	Millwork
~~Division 7~~	~~Siding~~
Division 08	Doors/Rollup Doors/Frames/Hardware

Division 08	Glass & Glazing
Division 09	Finishes
Division 10	Specialties & Accessories
Division 12	Furnishings
Division 21	Fire Protection
Division 22	Plumbing
Division 26	Electrical
Division 33	Utilities

The Subcontractor shall be responsible for complying with the requirements of each Scope of Work Description **even if** those requirements are not shown within the Specification Sections listed above.

This Subcontractor shall be responsible for all Primary Specification Responsibilities identified above in their entirety. All costs associated with Primary Specification Responsibilities shall be included in this Subcontractor's Scope of Work and reflected in bid amount.

This Subcontractor shall be at least partially responsible for Secondary Specification Responsibilities identified above. The Secondary Specifications identify work scopes for which this Subcontractor is not wholly responsible but shall be applicable as it relates to the execution of Primary Specification Responsibilities. This may include a varying degree of responsibility from simple coordination to performing entire portions of work. The Secondary Specifications are not intended to be all inclusive and shall not limit the Subcontractor in any way with regards to installation of work identified in Primary Specification Responsibilities.

1.0 FINAL CLEANING SCOPE OF WORK DESCRIPTION

1. This Subcontractor shall provide a complete Final Building Cleaning acceptable to the Owner, Designers, and the Construction Manager including, but not limited to sweeping, damp mopping, stripping floors, waxing floors, vacuum carpets, wipe down of finishes / fixtures, exterior pressure washing, window washing, etc.
2. This Subcontractor shall include all (multiple) mobilizations as required to complete this scope of work.
4. This Subcontractor shall provide adequate manpower and supervision acceptable to the Contractor to comply with the Project Schedule.
5. Final Cleaning – Unless noted otherwise herein, the Work required as part of this Subcontract shall include a comprehensive project cleaning, including but shall not be limited to the following:

    1. Sweeping and damp mopping of all floor surfaces in which the manufacture's recommendations suggest sweeping and damp mopping as a recommended cleaning method.
    2. As scheduled by the Construction Manager and prior to Owner move-in, sweep, damp mop and strip the factory finish on resilient tile surfaces and then apply the specified neutralizing floor cleaner and coats of wax as specified and per

the manufacturer's recommendations to protect the resilient tile floor surfaces during and after construction.

3. Vacuuming carpet (shampoo carpet, where necessary, to remove stains, etc.).

4. Wiping down and cleaning of the following:
   a. Plumbing fixtures and accessories.
   b. Manufactured casework and cabinets.
   c. Mirrors
   d. Interior and exterior door and window frames.
   e. Interior and exterior glass including all windows, storefront and hollow metal framed glass.
   f. Wall partitions including base material.
   g. Toilet partitions and accessories.
   h. Light fixture lenses.
   i. All railings
   j. Polished surfaces
   k. Removing manufacturer decals from equipment, etc. (As directed by Construction Manager)
   l. Remove labels which are not permanent. (As directed by Construction Manager)
   m. Hollow metal doors, wood doors.
   n. Rubber floor base.
   o. Aluminum and/or Steel Sash window framing and glass, aluminum storefront systems and glass, aluminum curtain wall systems and glass.
   p. Millwork, counter tops, shelving, etc.
   q. HVAC ceiling diffusers.
   r. Louvers and Vents.
   s. All exposed horizontal ledges or flat surfaces that may retain debris, dirt, dust, etc.
   t. All polished metal/finish metal surfaces, including but not limited to, door hardware, etc.
   u. All hard-tiled surfaces.
   v. Interior surfaces of can lights and bulbs.
   w. Clean exposed areas of exterior canopy(s).
   x. Clean exposed exterior and interior hard-surfaced finishes to a dust-free condition, free of stains, films and similar foreign substances.
   y. Vacuum carpet using a commercial machine.
   z. Exposed mechanical ductwork, piping, accessories and heaters are to be cleaned.
   aa. Pressure wash all exterior sidewalks, concrete pavement and asphalt.
   bb. FE/FEC
   cc. Interior Specialties
   dd. Window Treatments

~~ee. Firing range equipment~~

6. This Subcontractor shall use only cleaning materials and equipment that are compatible with the surface being cleaned, and as recommended by the manufacturer of the material. Prior to the final building cleaning work commencing, the Final Clean Subcontractor shall obtain the manufacturer's recommended cleaning guidelines from the applicable on-site Subcontractor or Contractor to ensure cleaning materials used to accomplish this Scope of Work will not harm or detrimentally affect the particular item or surface being cleaned. The Cleaning Contractor will not claim lack of knowledge of manufacturer product for any surfaces, if damaged from improper cleaning and will reimburse Contractor in full for any damaged surfaces. Final Clean Subcontractor will not proceed with any cleaning until building component's product data has been read and acknowledged. All cleaning products shall be environmentally friendly.
7. Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to the condition expected in a normal, commercial building cleaning and maintenance program. Comply with all manufacturers' instructions.
8. Final cleaning Work will require multiple mobilizations as directed by the Construction Manager. **No additional charges will be accepted for multiple mobilizations.**
9. Wash all glass on both faces in each area of Project not more than four (4) days prior to date scheduled for inspections that establish date of Substantial Completion. Wash glass as recommended by glass manufacturer. Glass and Glazing is to be cleaned interior and exterior on all levels and elevations of the project.
10. This Subcontractor shall reference the Interior Finish Schedule designated on the drawings to determine the floor and wall finishes which shall be cleaned as part of this Scope of Work.
11. Upon completing the final cleaning work within a specific building area, the Final Clean Subcontractor shall request the Construction Manager to inspect the particular building area for approval. Following receipt of written approval from the Construction Manager, the Final Clean Subcontractor shall not be obligated to re-clean the previously cleaned and approved specific building area.
12. Apply specified number of coats of wax to all Resilient Tile Flooring with products specified or recommended by the manufacturer. If additional coats are required by the Contract Documents, this Subcontractor shall be responsible for whichever requirement is more stringent.
13. This Subcontractor shall make provisions within its Base Bid proposal to include all necessary scaffolds, man lifts, etc. in order to reach areas within the building(s) which will require final cleaning as part of this Subcontract. Where scaffolds, man lifts, etc. are necessary, the Final Clean Subcontractor shall be responsible for protecting the applicable floor and/or roof surface, etc. by providing an approved covering (i.e. plywood, etc.) in order to prevent damage to the applicable floor and/or roof surface.

14. Prior to commencing with the final cleaning of the project, the Final Clean Subcontractor shall field verify and provide the Construction Manager with written confirmation that all substrate finishes are acceptable to receive final cleaning. Failure to

notify the Construction Manager in writing of such acceptance prior to commencing any work shall constitute this Subcontractor's acceptance of the applicable substrate finish.

15. This Subcontractor shall be responsible for providing and maintaining protective coverings, when required to protect the work of other trades. Should any Final Cleaning damage or come into contact with work of other trades, then the Final Cleaning Subcontractor shall be responsible for all costs necessary to restore the affected work back to its original condition prior to the Final Cleaning being installed.

16. This Subcontractor shall remove temporary floor protection to perform cleaning.

17. This Subcontractor shall include adequate supervision, manpower crews and equipment at all times to meet the schedule requirements. This Subcontractor acknowledges that this Subcontractors work will require working in multiple areas, on multiple floors concurrently to the extent that at during much of the project schedule significant work will occurring on both floors concurrently and this Subcontractor will be required to provide manpower and equipment required to meet or improve the durations shown on the project schedule as part of the base bid.

~~18. Subcontractor shall include 100 man-hours within the base bid to be used for cleaning as directed by the Construction Manager. The value of unused monies or man hours remaining upon completion of this Scope will be credited via deduct change order at time of reconciliation.~~

OTHER SCHEDULE SUMMARY INFORMATION—

The Substantial Completion date for the Final Clean Subcontractor is as reflected within the Construction Schedule. Special attention should be directed to the Construction Schedule for project sequencing requirements which are a requirement of this Scope of Work.

END OF SECTION
TRADE PACKAGE SCOPE OF WORK:
01A FINAL CLEAN SUBCONTRACT

TRADE PACKAGE SCOPE OF WORK

03A CONCRETE FOUNDATION, WALL, AND SLAB PACKAGE

Furnish all labor, materials, tools, taxes, safety, insurances, equipment, hoisting, cranes, supervision, and all other incidentals necessary to accomplish all **Concrete Foundation~~, Wall,~~ and Slab Package** Work in accordance with all Contract Documents and as defined within **Trade Package General Scope Requirements** and this Scope of Work.

Subcontractors/Suppliers performing work on multiple portions of the project site (i.e., buildings, parking area, site, etc.) shall provide separate equipment, hoisting, cranes, full-time English-speaking supervision including, but not limited to management, superintendent, on-site foreman, tradesman, laborers, etc. for each portion unless agreed to otherwise in writing by the General Contractor. If the project needs and schedule are not being met to the satisfaction of the General Contractor, written approval will be rescinded, and the original staffing requirements shall be provided by the Subcontractor.

Project Specifications for the Concrete Foundations and Slabs Package Scope of Work are listed below. This Subcontractor or Supplier shall carefully examine all specification sections and drawings within the Contract Documents and be responsible for all work described within this Scope of Work and as required on the project.

PROJECT SPECIFICATIONS

This Subcontractor is responsible for all Division 1 - General Requirements prepared by the Architect, Design Consultants, and/or General Contractor or as designated elsewhere within the Technical Specifications or Drawings as applicable to this Trade Package Scope of Work.

DIVISION 01 – GENERAL REQUIRMENTS	
GC Req.	General Requirements Manual
GC Req.	Trade Package Scope Manual
GC Req.	Trae Package General Scope Requirements
Division 01	All Division 01 Specification as Required by Samet Corporation

Primary Responsibility

This Subcontractor is responsible for all Primary Specification Responsibilities listed below unless this Scope of Work specifically states otherwise.

PRIMARY TECHNICAL SPECIFICATION RESPONSIBILITIES (PROJECT MANUAL)	
	Specifications and notes included on the Drawings
Division 03	Concrete
033000	Cast-In-Place Concrete

Secondary Responsibility

This Subcontractor is responsible for all Secondary Specification Responsibilities listed below to the extent applicable, or defined, within this Scope of Work.

SECONDARY TECHNICAL SPECIFICATION RESPONSIBILITIES	
Gen. Note	**This Subcontractor is responsible for complete Specifications package as it relates to the Concrete Foundation~~, Wall,~~ and Slab Package System scope of work.**
Division 04	Masonry
Division 05	Metals
Division 07	Thermal & Moisture Protection
Division 09	Finishes
Division 21	Fire Suppression
Division 22	Plumbing
Division 23	Heating, Ventilation, and Air Conditioning
Division 26	Electrical
Division 27	Communications
Division 31	Earthwork
Division 32	Exterior Improvements
Division 33	Utilities

The Concrete Foundation and Slab Package Subcontractor shall be responsible for complying with the requirements of each Scope of Work Description / Clarification Section listed below, **even if** those requirements are not shown within the Specification Sections listed above.

This Subcontractor shall be responsible for all Primary Specification Responsibilities identified above in their entirety. All costs associated with Primary Specification Responsibilities shall be included in this Subcontractor's Scope of Work and reflected in bid amount.

This Subcontractor shall be at least partially responsible for Secondary Specification Responsibilities identified above. The Secondary Specifications identify scopes of work for which this Subcontractor is not wholly responsible but shall be applicable as it relates to the execution of Primary Specification Responsibilities. This may include a varying degree of responsibility from simple coordination to performing entire portions of work. The Secondary Specifications are not intended to be all inclusive and shall not limit the Subcontractor in any way with regards to installation of work identified in Primary Specification Responsibilities.

The **Concrete Foundations and Slabs Package Subcontractor** is responsible for all Work described herein and below unless specifically noted otherwise.

See below for all safety submittals required throughout the duration of the project:

3.0 CONCRETE FOUNDATION, WALL, AND SLAB PACKAGE

3.0.1 This Subcontractor is responsible for all layout work, field engineering including vertical control, providing, and maintaining lines and batter boards, protection of survey pins provided by others and coordination between its Subcontractors and other on-site subcontractors for all aspects covered under this Scope of Work. Initial building corners and control points will be established by the Contractor for use by the Subcontractor to complete this Scope of Work.

3.0.2 Concrete Formwork – This Work shall include providing a complete concrete formwork system, where required, including but not limited to, formwork design / engineering, safety measures, preformed steel forms, ply-form material, strong-backs, walers, kickers, wall braces and shores, temporary elevated slab on deck shores, if required, formed construction joints, edge forms, form ties, form release agents, chamfer strips, installation of dovetail anchors slots, flashing reglets, nails, spikes, lag bolts, through bolts, miscellaneous anchors, preformed plastic water-stop, adjustable wedge inserts, threaded inserts, sealers, miscellaneous incidentals, form stripping, pointing, patching and rubbing of all exposed concrete surfaces within 24 hours following the form stripping operation, concrete embed supports, etc. This Subcontractor shall provide all concrete form work, including but not limited to, concrete footing forms, where required, step footing forms, rebar templates, anchor bolt templates, slab on grade column block-out forms, concrete pier forms, concrete wall and plaster forms, if required, wall block-out forms, where required, slab on grade edge forms, slab on grade construction joints, depressed slab forms, slab on grade turndown forms, etc.

3.0.3 Miscellaneous Block-out Formwork – Miscellaneous slab on grade, wall or elevated slab block-out forms / sleeves required to accommodate work of other trades will be provided by the Subcontractor requiring a specific slab on grade, wall, or elevated slab block-out form / sleeve, unless noted otherwise and must be coordinated with the other trade and the site superintendent.

3.0.4 Concrete Reinforcement and Accessories – This Work shall include furnishing and installing a complete concrete reinforcement and accessories system, including but not limited to, all reinforcing steel, welded steel wire fabric at slab on grade (as noted), tie wire, bar supports, bar chairs, slab on grade expansion joint filler and felts, column / wall support anchor bolts, adhesive anchors, etc. This Subcontractor shall furnish and install all concrete reinforcement and accessories work, including but not limited to, concrete foundation reinforcement, including footing wall dowels to receive masonry block walls by others, concrete wall reinforcement, concrete steps on grade reinforcement, concrete column reinforcement, concrete slab on grade turndown reinforcement, concrete slabs on grade reinforcement, including thickened slab reinforcement, elevated supported slab reinforcement, etc. All concrete steel bar reinforcement such as concrete footing dowels, thickened slab on grade dowels, or any other miscellaneous rebar, etc., cast into a concrete assembly is part of this Scope of Work.

3.0.5 Cast-In-Place Concrete and Accessories – This Work shall include furnishing and installing all cast-in-place concrete and accessories, including but not limited to, all concrete materials for foundations, spread footings, step footings, strip footings, patio wall footings, slabs on grade, elevated slab on

metal decking (mezzanine), column block out concrete, stair landing fill, stair pan fill, concrete walls, concrete steps, thickened slab, steel step nosing on grade, interior concrete equipment housekeeping pads, concrete pad and footings for project mock-up panel, etc. in accordance with the concrete finishes specified, concrete floor sealers, curing compounds, expansion joints, slab on grade vapor barriers, non-shrink grout, saw cut joints, water-stop, diamond dowels, smooth bar dowels , etc. as required to complete this concrete scope of work.

3.0.6 Concrete Finishes – This Work shall include placement and finishing of all concrete furnished and installed as part of this scope of work in accordance with the finish tolerance requirements specified. Work shall also include providing slab on grade saw cut and/or tooled joints, where specified. Unless noted otherwise, all exposed concrete shall be pointed, rubbed, and patched to provide a uniform and smooth face finish as part of this Scope of Work. Pay close attention to FF/FL numbers referenced in contract specifications.

3.0.7 Extreme care shall be taken to place and finish this scope of work in accordance with applicable tolerances per the contract documents. This shall include applicable tolerances pertaining to applicable floor finish. Subcontractor shall coordinate tolerances by specified floor finish with the Contractor. Subcontractor shall utilize place and finish techniques (separate pours, setting pipe screeds, etc.) must be utilized to ensure these tolerance requirements are met. This subcontractor is to hit all floor flatness and floor levelness tolerance laid out by the construction documents or the flooring system that is being installed. This is subcontract should take note of all special inspection requirement for the concrete scope of work.

3.0.8 Control Joints – This work shall include installing all joints in the slab on grade. Joints shall be installed so as not to impair strength or appearance of concrete, and at locations indicated on the construction drawings and/or approved by the Contractor. Saw joints shall be cut 1/8" wide by at least one-fourth the thickness of the slab. Saw joints shall be installed as soon as the cutting action will not damage the concrete surface and before the concrete develops random cracks (as soon as finishing is complete). This subcontractor is responsible to control dust from saw cutting activities as per OSHA/project safety standards.

3.0.9 Concrete Curing – This Work shall include furnishing and installing specified curing and sealing compounds at all concrete slabs scheduled as part of this Scope of Work. Subcontractor shall confirm that the proposed cure and seal compound will have compatibility with all future scheduled floor finishes to not impede any future floor finishes work being performed by other trades. Any correction needed from a non-compatible product being used will be at the cost of this subcontractor. If the proposed floor finishes specified requires that the concrete surface be wet cured in lieu of the specified cure and seal compound, then this Subcontractor shall wet cure the concrete surface(s) at no additional cost. Installation of the curing compound (or wet curing) shall begin as soon as possible after the control joints are cut (as soon as the joints are cut, and the resulting dust is removed from the slab).

3.0.10 Stepped Footings / Forms – ~~Where~~Are required to accommodate underground site utility piping, plumbing piping, electrical conduit, or mechanical piping which enter the building under or

throughis run across scheduled concrete foundations/footings, they shall step footings as required to accommodate this work being provided by other trades at no additional cost. This Subcontractor shall reference the site utility, mechanical, electrical, gas, mechanical, and plumbing drawings to determine underground pipe or conduit locations to ascertain these requirements and coordinate with the Contractor as necessary.

3.0.11 Interior & Exterior Equipment Pads – This Work shall include furnishing and installing all concrete related work required for interior and exterior plumbing/mechanical/electrical/fire protection equipment including concrete equipment pads, transformer pads, water heater pads, boiler pads, pump pads, housekeeping pads, generator pad, etc. This Subcontractor shall coordinate the specific size requirements of these interior equipment concrete pads with the respective HVAC, Plumbing, Electrical, and Fire Protection Subcontractors and shall coordinate the finish requirements with the Contractor. Locations and quantities of required pads shall be provided to this Subcontractor prior to mobilization for coordination and placement during a single mobilization.

3.0.12 Hot/Cold Weather Concrete – This Subcontractor shall include in the base bid all items necessary for Hot/Cold Weather Concrete protection including admixtures, blankets, etc.

3.0.13 Grouting Baseplates – This work shall include furnishing and installing non-shrink grout in all areas where required by the Contract Documents.

3.0.14 All necessary hoisting equipment required to furnish and install all concrete shall be provided as part of this Scope of Work.

3.0.15 All necessary conveyance equipment required to place and finish all concrete shall be provided as part of this Scope of Work.

3.0.16 This Subcontractor shall furnish concrete pumps, pump trucks, and light towers as required for installation of this scope of work and to make necessary pours.

3.0.17 This Subcontractor is responsible for digging and maintaining a truck washout area in a location specified by the Contractor. This subcontractor is responsible for disposing of concrete spoils.

3.0.18 Provide and maintain OSHA approved rebar caps for all exposed ends.

3.0.19 Concrete mixes in footings/foundations shall be as indicated in by the contract documents.

3.0.20 Backfill of foundations and foundation walls is included in this Subcontract.

3.0.21 Under-Slab Vapor Barriers – This Work shall include furnishing and installing a complete slab vapor barrier system, including but not limited to, under slab vapor barrier membrane, pipe boots, seam-tape, miscellaneous accessories, etc. at all locations designated within the Contract Documents. Any specific tears, rips, etc. made in the under- slab vapor barrier system shall be patched in

accordance with manufacturer recommendations at no additional cost. Vapor barrier should be as specified in the contract documents. All seams should be taped to provide a solid or complete vapor barrier as per the manufacturer's recommendations. Coordinate installation of vapor barrier with the termite control subcontractor.

3.0.22 Expansion Joint Assemblies – This Work shall include furnishing and installing all expansion joints specified to be installed directly in the Concrete Foundations & Slabs Subcontractors work.

3.0.23 This Subcontractor shall assume the responsibility for determining if the building pad or site related work Subgrade elevations as delivered by others are within a tolerance of plus or minus one tenth (+0.10') of one foot and are in conformance with the information reflected on the drawings. The Contractor shall be notified of the acceptance or rejection of these subgrades prior to commencement of this scope of work.

3.0.24 Layout by others will consist of benchmarks and control points. All other required layout for this scope of work is specifically included by this subcontractor. Memorialize benchmarks and control points; protect and maintain them throughout the duration of the project.

3.0.25 Excavation, Trenching, Backfilling, Fine Grading & Compaction - This Work shall include, but not be limited to, all excavation, trenching, backfilling, fine grading and compaction work associated with the proper installation of all work required of this Subcontract, including, but not limited to, concrete foundations, slab on grade turndowns, concrete steps on grade, interior concrete equipment pads, foundations, concrete piers, etc., backfilling and compacting stone or suitable backfill atop concrete foundations, etc. compacting soil adjacent to and below grade masonry walls, backfilling and compacting stone and/or soil adjacent to below grade masonry walls, recessed slab on grade excavation, fine grading, compaction, etc. All excavation, backfilling, trenching and compaction work shall be based on the use of safe excavation practices, governed by the Occupational Safety and Health Administration (OSHA).

3.0.26 Graded Aggregate Stone Base - This Work shall include installing a graded aggregate stone base underneath all concrete slabs as specified in the contract documents.

3.0.27 Foundation Spoils – Subcontractor shall remove all foundation spoils from the building pad and place on-site in a location approved by the Contractor. This soil may be utilized for backfill or at the direction of the ~~construction manager~~Contractor.

3.0.28 This Subcontractor shall repair all areas where sub-grade was disturbed by this Subcontractor. All approved fill material will be furnished from an approved source and installed by this subcontractor at no cost to the Owner or Contractor.

3.0.29 Dewatering – This Subcontractor shall leave its work in a condition that will naturally drain at the end of each day. If standing water accumulates, this Subcontractor is responsible for dewatering, pumping of water, de-mucking, and subgrade and soil restoration at no additional cost.

3.0.30 This Subcontractor shall provide a concrete cylinder curing box capable of meeting the specified on required ACI/ASTM standards for the project. The size of the box shall be dependent on the number of cylinders needing to be cured at one given time.

3.0.31 This Subcontractor will need to reference the contract documents as well as coordinate with the Contractor to provide a depression in the slab that will facilitate flooring and plumbing drains as required by the contract documents (reference 7.11 for typical). Floor finishes to be figured into dimensional requirements to ensure a proper fit and finish, per the contract documents.

3.0.32 Special Inspections – As Special Inspections will be required on this project it will be the responsibility of this Subcontractor to provide Supervision to accompany Inspectors as required. Any deficiencies noted shall be corrected at the time of inspection. If this Subcontractor is unable to make the correction during inspection and the deficiency is placed on a non-compliant list this Subcontractor will have no more than 48 hours to make the correction and schedule the reinspection to have the item removed from the non- compliant list. All non-compliant work noted shall be reported to the ~~Construction Manager~~Contractor as soon as possible and before the close of business on the day of inspection. Once the corrections have been completed this Subcontractor shall notify the Construction Manager for confirmation and re-inspection. Failure to make the corrections as stated above could result in a stop work order until the correction has been made.

4.0 MASONRY

4.0.1 Masonry Reinforcement and Accessories – This Subcontractor and the Masonry Subcontractor shall closely coordinate the concrete and masonry reinforcing shop drawings to ensure a complete reinforcement system is accomplished between both trades' Scope of Work.

4.0.2 This Subcontractor shall be responsible for the proper spacing and locating of the reinforcement dowels to accept the CMU as sized and located, per the contract documents. This Subcontractor shall coordinate with the Contractor and the Masonry Subcontractor responsible for the masonry work prior to commencement and installation of reinforcement dowels to minimize conflicts and errors. Any and/or all reinforcement dowel(s) which are incorrectly located and interfere with the installation of the CMU shall be promptly and properly corrected, by this Subcontractor by methods approved by the Designer.

5.0 STRUCTURAL STEEL & MISC. METALS

5.0.1 Steel & Metal Embeds – This Work shall include **coordinating and installing** all steel and metal embed items furnished by others which are cast directly into or attached to a concrete system, including but not limited to, all required field engineering, vertical control and layout, stair nosing, column anchor bolts, steel weld plates, interior bollards~~, if applicable~~, non-shrink grout, miscellaneous embedded angles, etc. All structural steel embed items will be furnished by the Structural Steel and Misc. Metals Subcontractor to this Subcontractor for installation. This Subcontractor shall be responsible for unloading, sorting, storing, and protecting miscellaneous steel materials furnished by others. This subcontractor is responsible for notifying the Contractor of any missing embeds 48 hours prior to a scheduled pour.

5.0.2 This Subcontractor shall be responsible for initial height of one leveling nut per baseplate and marking the same with paint, tape, etc. as directed by the Contractor in coordination with the Structural Steel Subcontractor.

22.0 PLUMBING SCOPE OF WORK DESCRIPTION

22.0.1 This subcontractor is responsible for coordinating withthis the Plumbing subcontractor for all block outs, slopes, and drain locationstrench drains, floors drain, etc.

-OTHER SCHEDULE SUMMARY INFORMATION-

The Substantial Completion date for the Concrete Subcontractor is as reflected within the Construction Schedule. Special attention should be directed to the Construction Schedule for project sequencing requirements which are a requirement of this Scope of Work.

END OF SECTION
TRADE PACKAGE SCOPE OF WORK:
03A CONCRETE FOUNDATION, WALL, AND SLAB PACKAGE SUBCONTRACT

TRADE PACKAGE SCOPE OF WORK

04A MASONRY PACKAGE

Furnish all labor, materials, tools, taxes, safety, insurances, equipment, hoisting, cranes, supervision, and all other incidentals necessary to accomplish all **Masonry Package** Work in accordance with all Contract Documents and as defined within **Trade Package General Scope Requirements** and this Scope of Work.

Subcontractors/Suppliers performing work on multiple portions of the project site (i.e., buildings, parking area, site, etc.) shall provide separate equipment, hoisting, cranes, full-time English-speaking supervision including, but not limited to management, superintendent, on-site foreman, tradesman, laborers, etc. for each portion unless agreed to otherwise in writing by the General Contractor. If the project needs and schedule are not being met to the satisfaction of the General Contractor, written approval will be rescinded, and the original staffing requirements shall be provided by the Subcontractor.

Project Specifications for the Masonry Package Scope of Work are listed below. This Subcontractor or Supplier shall carefully examine all specification sections and drawings within the Contract Documents and be responsible for all work described within this Scope of Work and as required on the project.

PROJECT SPECIFICATIONS

This Subcontractor is responsible for all Division 01 - General Requirements as listed below prepared by the Architect, Design Consultants, and/or General Contractor or as designated elsewhere within the Technical Specifications or Drawings as applicable to this Trade Package Scope of Work.

DIVISION 01 – GENERAL REQUIRMENTS	
GC Req.	General Requirements Manual
GC Req.	Trade Package Scope Manual
GC Req.	Trae Package General Scope Requirements
Division 01	All Division 01 Specification as Required by Samet Corporation

Primary Responsibility
This Subcontractor is responsible for all Primary Specification Responsibilities listed below unless this Scope of Work specifically states otherwise.

PRIMARY TECHNICAL SPECIFICATION RESPONSIBILITIES (PROJECT MANUAL)	
	Specifications and notes included on the Drawings
Division 04	Masonry
04-20-00	Unit Masonry
04-20-02	Architectural Concrete Masonry Units
04-43-13	~~Manufactured Stone Veneer~~~~Stone Masonry Veneer~~ Manufactured Stone Veneer
04-72-06	Cast Stone Masonry
071900~~Division~~	Water Repellants ~~Thermal and Moisture Protection~~

~~07~~	

Secondary Responsibility

This Subcontractor is responsible for all Specification Responsibilities in the contract documents to the extent applicable, or defined, within this Scope of Work.

SECONDARY TECHNICAL SPECIFICATION RESPONSIBILITIES	
Gen. Note	**This Subcontractor is responsible for complete Specifications package as it relates to the Masonry Package System scope of work.**
Division 03	Concrete
Division 05	Metals
Division 07	Thermal & Moisture Protection
Division 08	Opening
Division 09	Finishes
Division 21	Fire Sprinkler
Division 22	Plumbing
Division 23	Heating, Ventilation, and Air Conditioning
Division 26	Electrical
Division 31	Earthwork
Division 32	Exterior Improvements
Division 33	Utilities

The Masonry Subcontractor shall be responsible for complying with the requirements of each Scope of Work Description / Clarification Section listed below, **even if** those requirements are not shown within the Specification Sections listed above.

This Subcontractor shall be responsible for all Primary Specification Responsibilities identified above in their entirety. All costs associated with Primary Specification Responsibilities shall be included in this Subcontractor's Scope of Work and reflected in bid amount.

This Subcontractor shall be at least partially responsible for Secondary Specification Responsibilities identified above. The Secondary Specifications identify scopes of work for which this Subcontractor is not wholly responsible but shall be applicable as it relates to the execution of Primary Specification Responsibilities. This may include a varying degree of responsibility from simple coordination to performing entire portions of work. The Secondary Specifications are not intended to be all inclusive and shall not limit the Subcontractor in any way with regards to installation of work identified in Primary Specification Responsibilities.

The Masonry Subcontractor is responsible for all Work described herein and below unless specifically noted otherwise.

~~See below for all safety submittals required throughout the duration of the project:~~

4.0 MASONRY SCOPE OF WORK DESCRIPTION

4.0.1 The drawings, details, and specifications do not necessarily indicate or describe all work required for the full performance and completion of the requirements of the Contract Documents. This Subcontractor shall use all reasonable care to include those items necessary and/or implied to fill foreseeable gaps, omissions, or conflicts that prevent a complete and functioning Masonry system even though it may not be detailed.

4.0.2 The Masonry Subcontractor is responsible for all layout work, field engineering including vertical control, providing, and maintaining lines and batter boards, protection of survey pins provided by others and coordination between its Subcontractors and other on-site subcontractors for all aspects covered under this Scope of Work. Initial building corners and control points will be provided by the General Contractor for use by this Subcontractor to complete this Scope of Work.

4.0.3 Unit Masonry - This Work shall include a complete Unit Masonry System, including but not limited to, shop drawings, scaffolding, material lifts, masonry units including brick, mortar, colored mortar (if specified), masonry sand, etc., concrete grout fill, horizontal joint reinforcement, adjustable brick wall ties and anchoring devices, control and expansion joints, expansion joint filler, block sealer, chases, recesses, pockets and openings in masonry to be used for installation by others, building in of items furnished by others into masonry such as access doors, door frames, anchors, sleeves, conduit, and inserts to be embedded into masonry, rigid steel masonry anchors, compressible joint filler, bond breaker strips, reinforcing bar positioners, if required, through wall flashing material, where specified, masonry damp proofing, where specified, rigid wall insulation and associated adhesives, where specified, miscellaneous masonry accessories, tie beams, weeps, cell vents, special masonry cuts, masonry cleaning at new work, protection of other work and repair, patching, rubbing, and pointing of mortar joints and new masonry surfaces at all exposed surfaces to receive paint, etc. per the contract documents. This subcontractor is responsible for a dumpster enclosures, Patios walls, and all masonry walls onsite.

4.0.4 Architectural Cast Stone & Stone Veneer - This Work shall include furnishing and installing architectural cast stone related to this Scope of Work. This shall include shop drawings, scaffolding, material lifts, cast stone units, mortar, anchors, hardware, clips, bearing pads, hangers, shims, inserts, plates, patching, accessories, and any other items required to provide a complete Cast Stone System per the contract documents. Washing and cleaning of architectural cast stone components shall also be provided, including but not limited to, removal of dirt, stains, mortar splatter, droppings, etc. Cleaning materials used shall be compatible with architectural cast stone finishes so that the appearance, color, etc. of architectural cast stone is not compromised.

4.0.5 The professional engineered design and detailing of all cast stone and its connection to the structural frame (furnish and install of all supports and steel designed) shall be the responsibility of this Subcontractor. This Subcontractor shall coordinate and verify that all structural elements providing support or anchorage to precast are adequate. Additional bracing required to support the structure as a result of imposed cast stone connection loads will be the responsibility of this Subcontractor in

accordance with the contract documents.

4.0.6 Cast stone to be finished in accordance with the Contract Documents. Point, patch, rub, acid-etch, etc. as required to provide specified architectural finish or substrate as required for subsequent finishes. Coordinate compatibility of sealers and/or bond breakers for architectural finishes and/or coatings.

4.0.7 Brick Veneer Masonry – This Work shall include providing and installing brick veneer masonry as shown in the Contract Documents. This shall include brick veneer, brick shapes, mortar, grouting, anchors, installing lintels supplied by others, and any other accessories required to supply a complete Brick Veneer Masonry System, per the contract documents.

4.0.8 Flashing - The Masonry Subcontractor shall be responsible for furnishing and installing all through-wall flashing and metal sill flashing types including providing mortar net at all flashing locations and primers and mastic, per the contract documents.

4.0.9 Masonry Fill - The Masonry Subcontractor shall provide grout or concrete fill for built-in work in masonry; concrete fill at lintels, bond beams, and reinforced block cells; collar joints below grade; or at other locations specified by the contract documents. The Masonry Subcontractor shall supply all pumps and/or associated equipment necessary to complete this work.

4.0.10 Spray/Roll Applied Water Resistant Barrier – This subcontractor is responsible for all WRB on masonry, where required by the contract documents~~CMU is covered by masonry veneer~~.

4.0.11 Reinforcing Steel - The Masonry Subcontractor shall furnish and install all reinforced steel including horizontal and vertical steel scheduled or required within masonry walls and/or concrete block bond beams, and Epoxy Dowels required at all thickened slab areas. All reinforcing steel bars shall be furnished by the Masonry Subcontractor for installation included as part of this Scope of Work. The Masonry Subcontractor will be responsible for unloading, sorting, storing, and protecting the reinforcing steel materials.

4.0.12 Reinforcing Steel Protection and Dust Control – This Subcontractor shall be responsible for all reinforcing steel protection (rebar caps) once commencing work in each area. All reinforcement shall be protected by OSHA standards. This subcontractor shall provide dust control measures as per OSHA for any dust creating activities.

4.0.13 The Masonry Subcontractor shall provide all horizontal joint reinforcing as required for a complete installation, per the contract documents.

4.0.14 This subcontractor shall be responsible for coordinating its work with all other trades that penetrate, run within, and/or bear on its work, including but not limited to, the Framing subcontractor, Waterproofing subcontractor, all MEP subcontractors, and the Steel Staircase installer and/or fabricator to coordinate penetrations, and anchor/embed locations. The subcontractor shall be responsible for boxing out all penetrations where a sleeve is not provided. Finish around

architectural louvers, vents, or any other items bearing on the masonry wall.

4.0.15 Masonry Anchors – This Work shall include providing and installing all masonry anchors and fasteners attached or anchored to metal studs / gypsum sheathing, if applicable, masonry walls, concrete slabs/panels, column anchors excluding welding work, where applicable, etc. as required to accomplish all masonry work, including but not limited to, epoxy wall dowels, rigid steel masonry anchors, "Z" ties, screw attached masonry veneer anchors, seismic masonry veneer anchors/fasteners, dovetail anchors, etc. per the contract documents.

4.0.16 Shoring - Miscellaneous shoring and/or wall bracing, if required to accomplish masonry work shall be provided by the Masonry Subcontractor. Subject bracing and/or shoring shall comply with applicable Building Codes and Federal OSHA Regulations.

4.0.17 Masonry Wall Rough Openings - This Work shall include providing all Masonry Wall Rough Openings at all locations, including but not limited to, all false work, if necessary, to provide all openings required for architectural and mechanical louvers, aluminum windows, aluminum storefront, overhead coiling or four-fold doors and grilles, HVAC, plumbing, fire protection and/or electrical equipment, fire extinguisher cabinets, access doors, hollow metal doors, etc. General Contractor and/or the applicable Trade Subcontractor will coordinate with the Masonry Subcontractor all masonry rough opening sizes required to accommodate its work.

4.0.18 Cleaning - This Work shall include providing Masonry Cleaning by washing and cleaning all items installed under this Scope of Work and adjacent dissimilar materials (i.e., aluminum glazed framing components, including windows, etc., hollow metal door/window frames, metal stairs, etc. prior to the finish trades, etc. starting their work), including but not be limited to, removal of dirt, stains, mortar splatter, droppings, etc. Cleaning materials used shall be compatible with the masonry materials and finishes so that the appearance, color, etc. of masonry work and the adjoining surfaces are not compromised. Areas shall be ready to receive finish paint, wall covering, sealer, etc. as specified.

4.0.19 Masonry Mock-Up Panel(s) – Provide mock-up panel(s)/wall(s) as designed for each different type masonry wall assembly. Each mock-up panel shall include the applicable brick veneer, concrete block, joint reinforcement, vertical and horizontal bar reinforcement, through-wall flashing, rigid cavity wall insulation, bituminous damp proofing, proposed mortar joints, texture, weeps, etc. The mock-up panel(s) approved by General Contractor, Designer, and/or ARB will be used as a standard throughout construction. Mockup panel(s) shall be a minimum 72" x 72" in size or in a size as required by the Contract Documents, whichever is greater.

4.0.20 All interior masonry surfaces below the specified finish ceiling heights as reflected within the Contract Documents shall be pointed, patched, rubbed, and prepared for finish painting.

4.0.21 The Masonry Subcontractor's work shall be in accordance with all applicable ASTM guidelines established for masonry construction.

4.0.22 The Masonry Subcontractor shall provide protection of all adjacent surfaces and materials.

4.0.23 The Masonry Subcontractor shall include patching around all piping, ductwork, conduits, and penetrations through masonry as required, per the contract documents.

4.0.24 This Subcontractor is to provide all add mixtures, curing compounds, etc. in accordance with the contract documents. All work shall be coordinated with finishes for compatibility, etc.

4.0.25 Subcontractor assumes all responsibility to remediate the occurrence of efflorescence.

4.0.26 Dewatering - This Subcontractor shall leave its work in a condition that will naturally drain at the end of each day. If standing water accumulates, this Subcontractor is responsible for dewatering, pumping of water, de-mucking, and subgrade and soil restoration at no additional cost.

4.0.27 Weather Protection - The Masonry Subcontractor shall provide hot and cold-weather protection in accordance with Masonry Industry Standards. Further, this Subcontractor shall protect on-site materials from adverse weather conditions whether the materials are installed or otherwise. Material installed each day must be protected at the end of each day. Any material supplied and installed under this Scope of Work damaged by weather from a failure by this Subcontractor to protect their Work shall be replaced at no cost to the Contractor.

4.0.28 Gauge Box Measuring Method – The Masonry Subcontractor shall construct gauge boxes for measuring sand for mortar in order to ensure that each batch is consistent. A gauge box is simply a wooden box without a bottom or top. The gauge box will rest on a board and will be filled with sand and leveled off at the top. Upon leveling off the sand at the top, the box is removed, and the sand left over will be the correct quantity for one (1) batch of mortar.

4.0.29 Weatherproof Covering Material for Masonry Material Stored Onsite – All Masonry materials stored on site shall be covered with a weatherproof covering material at the end of each day. Additionally, Tops of Walls shall be covered at the end of each day to reduce or eliminate precipitation entering the cavity or cells of block during construction.

5.0 STEEL AND MISC METALS SCOPE OF WORK DESCRIPTION

5.0.1 Miscellaneous Steel Installation – This Work shall include installing all miscellaneous steel items designated as part of this Scope of Work, including but not limited to, all required layout, steel lintel beams, bolt on steel angles, steel lintels and lintel bearing plates, where installed within a masonry wall system, anchor bolts, embedded steel items cast within a masonry system, bearing plates, access panels, sleeves, ties, anchors, etc. at all applicable project locations as furnished by the Structural Steel Supplier. The Masonry Subcontractor will be responsible for unloading, sorting, storing, and protecting miscellaneous steel materials furnished by the Structural Steel Supplier.

5.0.2 The Masonry Subcontractor shall furnish weld tie clips to receive steel column anchors to the Structural Steel Erection Subcontractor for his installation. The Masonry Subcontractor shall assist the Structural Steel Erection Subcontractor with locating the subject weld ties so that the work in the field is unimpeded.

7.0 RIGID INSULATION & SEALANTS SCOPE OF WORK DESCRIPTION

7.0.1 Rigid Insulation – This Work shall include providing and installing all rigid board insulation above and below grade which is attached to the face of a block backup wythe or exterior sheathing/metal stud system by others including all associated adhesives, clips, caulking compounds, tape, mastic, anchors, etc., at designated locations per the Contract Documents.

7.0.2 Joint Sealants - This Subcontractor shall provide all joint treatment within the cast stone system including, but not limited to, construction joints, etc. All caulking of cast stone to cast stone and cast stone to adjacent surfaces is included. Coordinate use of approved sealants (colors & materials) to ensure consistency throughout building.

8.0 HOLLOW METAL FRAMES SCOPE OF WORK DESCRIPTION

8.0.1 Hollow Metal Frame Installation – This Work shall include installing all hollow metal frames furnished by the Hollow Metal Frames, Doors, and Hardware Subcontractor which are scheduled or designated within a masonry wall assembly, including but not limited to, installing hollow metal door frames, jamb anchors, floor to frame anchors, etc. in conformance with the specification requirements and tolerances designated within the provisions of Steel Door Institute 105. Provide all necessary temporary bracing, spreaders, turnbuckles, wood blocking, miscellaneous hardware, anchors, and accessories required to properly perform the hollow metal frame installation work. Upon delivery of masonry wall assembly hollow metal frames, the Masonry Subcontractor will be responsible for unloading, securing, protecting, and installing all hollow metal frames scheduled within a masonry wall assembly. The Masonry Subcontractor shall provide a designated on-site representative to verify materials being furnished by the Hollow Metal Frames, Doors and Hardware Subcontractor are complete and in accordance with the Contract Documents. Upon completing the onsite verifications, the Masonry Subcontractor shall sign-off on delivery tickets and at that time will take responsibility of securing and protecting the applicable hollow metal frame material furnished by the Hollow Metal Frames, Doors, and Hardware Subcontractor.

8.0.2 Hollow Metal Frame Bracing - The Masonry Subcontractor shall install temporary bracing and/or spreaders on all hollow metal frames that are impacted by this Scope of Work.

-OTHER SCHEDULE SUMMARY INFORMATION-

The Substantial Completion date for the Masonry Package Subcontractor is as reflected within the Construction Schedule. Special attention should be directed to the Construction Schedule for project sequencing requirements which are a requirement of this Scope of Work.

—ALLOWANCES—

Allowances shall cover the cost of all materials and equipment delivered at the site and all required taxes, less applicable trade discounts. Costs for unloading and handling at the site, labor, installation costs, overhead, profit and other expenses associated with stated allowance amounts shall be included in the Subcontract Amount but not in the allowances. Whenever costs are more than or less than an allowance amount, the Subcontract Amount shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect the difference between actual costs and the allowances.

ALLOWANCES		
ALLOWANCE NO.	ALLOWANCE DESCRIPTION	AMOUNT
No. 1	Unit Masonry – Face Brick	$350 per Thousand

—UNIT PRICES—

To the extent that some or all the Subcontractor's Work is to be performed on a unit price basis, the Subcontract Amount shall be computed in accordance with the unit prices set forth below. Unit prices are deemed to include all costs related to Subcontractor's performance of the Work, including, but not limited to, costs of labor, supervision, services, materials, equipment, tools, scaffolds, hoisting, transportation, storage, insurance, and taxes, and all overhead and profit. Quantities shall be measured by means acceptable to Owner, General Contractor, and Subcontractor, and if applicable, an independent testing firm hired by Owner.

UNIT PRICES			
UNIT NO.	UNIT PRICE DESCRIPTION	UNIT PRICE	UNIT MEASURE
001	Mobilizations	$2,000	EA
002	Labor	$28	HR
003	Operator	$32	HR
004	Mason	$36	HR
005	Foreman	$45	HR
006	Project Manager	$60	HR

END OF SECTION
TRADE PACKAGE SCOPE OF WORK:
04A MASONRY PACKAGE SUBCONTRACT

TRADE PACKAGE SCOPE OF WORK

05A - STRUCTURAL STEEL ~~AND MISC METALS~~ PACKAGE

Furnish all labor, materials, tools, taxes, safety, insurances, equipment, hoisting, cranes, supervision, and all other incidentals necessary to accomplish all **Structural Steel and Misc. Metals Package** Work in accordance with all Contract Documents and as defined within **Trade Package General Scope Requirements** and this Scope of Work.

Subcontractors/Suppliers performing work on multiple portions of the project site (i.e., buildings, parking area, site, etc.) shall provide separate equipment, hoisting, cranes, full-time English-speaking supervision including, but not limited to management, superintendent, on-site foreman, tradesman, laborers, etc. for each portion unless agreed to otherwise in writing by the General Contractor. If the project needs and schedule are not being met to the satisfaction of the General Contractor, written approval will be rescinded, and the original staffing requirements shall be provided by the Subcontractor.

Project Specifications for the **Structural and Misc. Metals Package** Scope of Work are listed below. This Subcontractor or Supplier shall carefully examine all specification sections and drawings within the Contract Documents and be responsible for all work described within this Scope of Work and as required on the project.

PROJECT SPECIFICATIONS

This Subcontractor is responsible for all Division 01 - General Requirements as listed below prepared by the Architect, Design Consultants, and/or General Contractor or as designated elsewhere within the Technical Specifications or Drawings as applicable to this Trade Package Scope of Work.

DIVISION 01 – GENERAL REQUIRMENTS	
GC Req.	General Requirements Manual
GC Req.	Trade Package Scope Manual
GC Req.	Trae Package General Scope Requirements
Division 01	All Division 01 Specification as Required by Samet Corporation

Primary Responsibility

This Subcontractor is responsible for all Primary Specification Responsibilities listed below unless this Scope of Work specifically states otherwise.

PRIMARY TECHNICAL SPECIFICATION RESPONSIBILITIES (PROJECT MANUAL)	
	Specifications and notes included on the Drawings
Division 05	Metals
05-12-00	Structural Steel Framing
05-21-00	Steel Joist Framing
05-31-01	Steel Floor Decking – Composite

05-31-03	Steel Roof Decking
05-40-00	Cold Formed Metal Framing
05-44-00	Cold Formed Metal Trusses
05-50-00	Metal Fabrications
05-51-13	Metal Pan Stairs
05-52-13	Pipe and Tube Railings

Secondary Responsibility

This Subcontractor is responsible for all Specification Responsibilities in the contract documents to the extent applicable, or defined, within this Scope of Work.

SECONDARY TECHNICAL SPECIFICATION RESPONSIBILITIES	
Gen. Note	**Subcontractor is responsible for complete Specifications package as it relates to the Structural Steel and Misc. Steel Package scope of work.**
Division 03	Concrete
Division 04	Masonry
Division 09	Finishes

The **Structural Steel and Misc. Metals Package** Subcontractor shall be responsible for complying with the requirements of each Scope of Work Description / Clarification Section listed below, **even if** those requirements are not shown within the Specification Sections listed above.

This Subcontractor shall be responsible for all Primary Specification Responsibilities identified above in their entirety. All costs associated with Primary Specification Responsibilities shall be included in this Subcontractor's Scope of Work and reflected in bid amount.

This Subcontractor shall be at least partially responsible for Secondary Specification Responsibilities identified above. The Secondary Specifications identify scopes of work for which this Subcontractor is not wholly responsible but shall be applicable as it relates to the execution of Primary Specification Responsibilities. This may include a varying degree of responsibility from simple coordination to performing entire portions of work. The Secondary Specifications are not intended to be all inclusive and shall not limit the Subcontractor in any way with regards to installation of work identified in Primary Specification Responsibilities.

The **Structural Steel and Misc. Metals Package** Subcontractor is responsible for all Work described herein and below unless specifically noted otherwise.
~~See below for all safety submittals required throughout the duration of the project:~~

5.0 STRUCTURAL STEEL & MISC METALS PACKAGE SCOPE OF WORK DESCRIPTION

5.0.1 Structural Steel, Steel Joists and Steel Decking - This Work shall include detailing, fabricating, furnishing, and installing all structural steel, steel joists, steel roof decking, and steel floor decking systems, including but not limited to, shop drawings, shop cleaning and painting, all structural steel metal framing, steel columns, steel beams, steel tubes, steel beams with plates, steel bar joists,

special steel bar joists, steel joist bridging, steel joist girders, structural steel lintel beams, steel roof and slab on deck edge angles, steel roof decking, steel floor decking, galvanized steel and decking, where specified, steel bracing, shot/bolted/welded connections, closure strips and angles, bracing, connections, plates at joist extensions, brick support angle, edge of deck bent plate/angles, pour stops, slab plate with guide angles, mechanical, electrical and/or plumbing equipment roof, slab or wall opening framing to receive equipment provided by others, miscellaneous equipment steel framing, etc. as specified and designated within Contract Documents to comprise a complete Structural Steel, Steel Joist, and Steel Decking System. (Note: Section 2 Sheet 3.74 for Roof Decking)

5.0.2 Miscellaneous Metals – This Work shall include detailing, fabricating, furnishing, and installing all miscellaneous steel, including but not limited to, shop drawings, shop cleaning and painting, all miscellaneous steel, pipe bollards (material only), furnish and install dumpster gates (reference 8/4.21), galvanized steel, where specified, miscellaneous anchor bolts, bent plate jamb, galvanized steel angles at all exterior locations, galvanized steel plates, loose bearing and leveling plates, column base plates, where specified, permanent steel masonry wall partition bracing and supports, galvanized steel angles with headed studs, bent plate wall anchors, shelf and relief angles, stair nosing, steel support framing, headed beam shear studs, headed column shear studs, weld plates with headed studs, base plate leveling nuts, steel deck cover plates, steel deck edge bent plate, closure angles, accessories, equipment roof/floor deck opening angle framing, brick support angle, deck support angle, angle brackets, plates at timber brackets (supply only), etc. at all locations designated within the Contract Documents.

5.0.3 Miscellaneous Metals Installation Clarification –The following miscellaneous steel items shall be detailed, fabricated, and furnished by this Subcontractor to the designated Trade Subcontractor outlined below for their installation. Additionally, the designated Trade Subcontractor below shall unload, sort, and store all steel materials to be installed as part of their respective Scope of Work. However, in the event the steel items defined below are shipped to the project site along with other steel items to be installed by this Subcontractor, Subcontractor shall unload, sort, store, and then subsequently turnover these items to these respective Trade Subcontractors for its installation. Unless noted otherwise herein, all other steel materials required of this project shall be furnished and installed by this Subcontractor.

- Concrete Foundations & Decking/Stair Infill Subcontractor – Column anchor bolts, embed plates, embed angles, bollards, etc. cast directly into a concrete system.
- Masonry Subcontractor – Loose masonry lintels, block support lintels, embed plates, bearing plates, cast-in anchor bolts, etc. set directly into a masonry system.
- Light Gauge Truss Erection Subcontractor – Metal decking above light gauge trusses and mechanically fastened lintels.

5.0.4 This subcontractor is responsible for performing and providing an anchor bolt survey performed by a licensed surveyor to confirm the anchor bolts are in the correct location prior to erecting.

5.0.5 Metal Stairs – This Work shall include detailing, fabricating, furnishing, and installing all metal stair systems, including but not limited to, shop drawings, shop cleaning and painting, metal stair assemblies, steel columns, stair pans, stair nosing, platforms, steel stringers, steel risers, platform landings, plates, railings, removeable railing sections, expansion anchors, welded and bolted connections, bolts, floor anchors, etc. at all locations designated within the Contract Documents.

5.0.6 Handrails, Guard Rails, and Railings - This Work shall include detailing, fabricating, furnishing, and installing all handrail and guardrail systems, including but not limited to, shop drawings, shop cleaning and painting, steel picket railings, decorative handrails, decorative guardrails, pipe rails, stainless steel cable, coring, non-shrink grout, anchors, railing accessories, etc. at all locations designated within the Contract Documents.

5.0.7 Subcontractor shall furnish and install all mechanical, electrical and/or plumbing equipment roof, slab or wall opening framing to receive equipment provided by others. Reference Mechanical, Electrical or Plumbing Drawings for sizes and locations as well as sizes and locations specified by each Mechanical, Electrical, and Plumbing subcontractor.

5.0.8 Subcontractor shall furnish and install expansion bolts, expansion anchors, flat bar anchors, etc. as designated within the Contract Documents to attach steel components to the face of a masonry wall and/or concrete assembly. The miscellaneous anchors shall be furnished by this Subcontractor as part of this Scope of Work.

5.0.9 Where applicable, the Subcontractor shall furnish and install all shear studs to complete all designated composite steel construction.

5.0.10 Subcontractor shall furnish and install the necessary frames at all roof deck conditions and interior floor deck where required for Work scheduled under this Subcontract. The respective Subcontractor requiring a specific frame will provide the size and location of these areas for the Subcontractor's fabrication and installation.

5.0.11 Subcontractor shall furnish and install all structural steel supports required to support all items if not provided by their respective Trade Subcontractor at all locations designated within the Contract Documents.

5.0.12 Cranage and Hoisting –Subcontractor shall provide all Cranage and Hoisting as required to facilitate this scope of work, including but not limited to, insurance, certified operator, inspections, lighting, flagmen, communication devices and all other incidentals required.

5.0.13 Subcontractor shall provide all materials per this scope of work in the finish as dictated by the contract documents.

5.0.14 All shop drawing connections not detailed in the contract documents shall be designed by this Subcontractor under the direct supervision of a Professional Engineer licensed in the State where the project is located. Shop drawings shall include these connection details and bear the seal and

signature of the Professional Engineer procured by this Subcontractor.

5.0.15 Non shrink grouting of column base plates and concrete fill for the stair pans will be provided by the Concrete Foundations & Slabs Subcontractor and is not part of this Scope of Work.

5.0.16 Subcontractor shall furnish, install, and maintain a complete Fall Protection Guardrail System for all elevated slabs, decks, stair openings, mechanical equipment/duct openings, elevated running track, mezzanines, etc. which are required by OSHA to receive a Guardrail System as stipulated by the OSHA Handbook for the Construction Industry (29 CFR PART 1926), Subpart L – Scaffolding and Subpart M – Fall Protection. Installation of the Fall Protection Guardrail System shall be based upon the elevated slabs, stair openings, decks, mechanical equipment/duct openings, elevated running track, mezzanines, etc. finish floor elevations to comply with the requirements for fall protection during the installation of the metal decking and after the placement of the elevated concrete slabs. Additional clarification and coordination are described as follows: Upon installation of the elevated concrete slabs on deck, the Concrete Foundations & Slabs Subcontractor shall furnish, install and maintain any additional appurtenances to provide a complete Fall Protection Guardrail System as stipulated by the OSHA Handbook for the Construction Industry (29 CFR PART 1926), Subpart L – Scaffolding and Subpart M – Fall Protection (i.e. toe boards, etc.). The Concrete Foundations & Slabs Subcontractor shall maintain the Fall Protection Guardrail System until the Structural Steel Subcontractor who is responsible for the steel railings at the mezzanines, elevated running track area, open lobby areas, etc., removes and palletizes the components of the Fall Protection Guardrail System to allow for immediate installation of metal railing work.

5.0.17 Subcontractor shall provide temporary railings at all stair locations until the time when permanent railings can be installed as part of this scope of work.

5.0.18 Subcontractor will provide ALL field welding work required of the project. This includes but is not limited to, welding of steel lintel beams to base plates, which are set as part of the Masonry Subcontractor's Scope of Work, screw attaching and welding off brick shelf angles to metal studs as well as welding the adjustable column anchor clips to the steel columns scheduled to receive a masonry column wrap or wall.

5.0.19 Touch-up Painting – Immediately after erection, clean field welds, bolted connections, and abraded areas of shop painted materials. Apply paint to exposed areas using same material as used for shop painting per the contract documents.

5.0.20 Lay-down Area - This project site will have a limited lay-down area for structural steel materials. To maintain the project schedule multiple deliveries may be required to complete this Scope of Work. It will be the responsibility of this Subcontractor to utilize the Project Schedule and any other applicable information to develop a closely coordinated material delivery plan that will ensure ALL materials to be provided as a part of this scope of work are delivered to the project site as needed to maintain the project schedule. No additional charges will be accepted for multiple deliveries or mobilizations due to lack of coordination by this Subcontractor.

5.0.21 The Contractor will designate areas on site to be utilized as material laydown areas. Material left exposed to the elements shall be cleaned, if deemed necessary by the Contractor, prior to the material being installed. Exposed Structural Steel that is scheduled to receive finish paint shall be free of foreign matter, which may cause the application of the finish coating to be aesthetically unacceptable.

5.0.22 This Subcontractor shall provide all labor, materials, equipment, hoisting, temporary utilities, etc. including providing temporary steel bracing as required and necessary to provide a complete turnkey misc. steel installation package.

5.0.23 Structural Steel components shall be installed plumb and true.

5.0.24 Subcontractor shall provide a wash down and final cleanup of all finished work installed by this subcontractor.

5.0.25 This Subcontractor shall provide protection of all adjacent surfaces and materials.

5.0.26 This Subcontractor shall provide galvanized materials at all exposed exterior locations in accordance with the Contract Documents.

5.0.27 Special Inspections – As Special Inspections will be required on this project it will be the responsibility of this Subcontractor to provide Supervision to accompany Inspectors as required. Any deficiencies noted shall be corrected at the time of inspection. If this Subcontractor is unable to make the correction during inspection and the deficiency is placed on a non-compliant list this Subcontractor will have no more than 48 hours to make the correction and schedule the reinspection to have the item removed from the non- compliant list. All non-compliant work noted shall be reported to the Contractor as soon as possible and before the close of business on the day of inspection. Once the corrections have been completed this Subcontractor shall notify the Contractor for confirmation and re-inspection. Failure to make the corrections as stated above could result in a stop work order until the correction has been made.

-OTHER SCHEDULE SUMMARY INFORMATION-

The Substantial Completion date for the Structural & Misc. Steel Package Subcontractor is as reflected within the Construction Schedule. Special attention should be directed to the Construction Schedule for project sequencing requirements which are a requirement of this Scope of Work.

END OF SECTION
TRADE PACKAGE SCOPE OF WORK:
05A STRUCTURAL AND MISC STEEL PACKAGE SUBCONTRACT

TRADE PACKAGE SCOPE OF WORK

6D CASEWORK AND COUNTERTOPS

Furnish all labor, materials, tools, taxes, safety, insurances, equipment, hoisting, cranes, supervision, and all other incidentals necessary to accomplish all **Casework and Countertops** Subcontract Work in accordance with all Contract Documents and as defined within **Trade Package General Scope Requirements** and this Scope of Work.

Subcontractors/Suppliers performing work on multiple portions of the project site (i.e., buildings, parking area, site, etc.) shall provide separate equipment, hoisting, cranes, full-time English-speaking supervision including, but not limited to management, superintendent, on site foreman, tradesman, laborers, etc. for each portion unless agreed to otherwise in writing by the General Contractor. If the project needs and schedule are not being met to the satisfaction of the General Contractor, written approval will be rescinded, and the original staffing requirements shall be provided by the Subcontractor.

Project Specifications for the **Casework and Countertops** Scope of Work are listed below. This Subcontractor or Supplier shall carefully examine all specification sections and drawings within the Contract Documents and be responsible for all work described within this Scope of Work and as required on the project.

PROJECT SPECIFICATIONS

This Subcontractor is responsible for all Division 01 - General Requirements as listed below prepared by the Architect, Design Consultants, and/or General Contractor or as designated elsewhere within the Technical Specifications or Drawings as applicable to this Trade Package Scope of Work.

DIVISION 01 – GENERAL REQUIRMENTS	
GC Req.	General Requirements Manual
GC Req.	Trade Package Scope Manual
GC Req.	Trae Package General Scope Requirements
Division 01	All Division 01 Specification as Required by Samet Corporation

Primary Responsibility
This Subcontractor is responsible for all Primary Specification Responsibilities listed below unless this Scope of Work specifically states otherwise.

PRIMARY TECHNICAL SPECIFICATION RESPONSIBILITIES (PROJECT MANUAL)	
	Specifications are included on the Drawings
061053	Miscellaneous Rough Carpentry
06-40-23	Interior Architectural Woodwork
12-32-13	Manufactured Wood – Casework
12-36-16	Metal Countertops
12-36-61.19	Quartz Agglomerate Countertops

Secondary Responsibility

This Subcontractor is responsible for all Secondary Specification Responsibilities listed below to the extent applicable, or defined, within this Scope of Work.

SECONDARY TECHNICAL SPECIFICATION RESPONSIBILITIES	
	Specifications are included on the Drawings
Gen. Note	**This Subcontractor is responsible for complete Specifications package as it relates to the Casework and Countertops Scope of Work.**
Division 06	Wood, Plastics, and Composites
Division 07	Joint Sealants
Division 09	Finishes
Division 11	Equipment
Division 22	Plumbing
Division 23	Heating, Ventilating, and Air Conditioning
Division 26	Electrical

The **Cabinets and Countertops** Subcontractor shall be responsible for complying with the requirements of each Scope of Work Description / Clarification Section listed below, **even if** those requirements are not shown within the Specification Sections listed above.

This Subcontractor shall be responsible for all Primary Specification Responsibilities identified above in their entirety. All costs associated with Primary Specification Responsibilities shall be included in this Subcontractor's Scope of Work and reflected in bid amount.

This Subcontractor shall be at least partially responsible for Secondary Specification Responsibilities identified above. The Secondary Specifications identify work scopes for which this Subcontractor is not wholly responsible but shall be applicable as it relates to the execution of Primary Specification Responsibilities. This may include a varying degree of responsibility from simple coordination to performing entire portions of work. The Secondary Specifications are not intended to be all inclusive and shall not limit the Subcontractor in any way with regards to installation of work identified in Primary Specification Responsibilities.

The **Cabinets and Countertops** Subcontractor is responsible for all Work described herein and below unless specifically noted otherwise to be part of another Subcontractor's Scope of Work.

Prior to commencing with the installation of any work, this Subcontractor shall field verify and provide the General Contractor with written confirmation that all areas scheduled to receive the materials provided as part of this Scope of Work are in a condition acceptable to this Subcontractor. Failure to notify the General Contractor in writing of such acceptance prior to commencing any work shall constitute this Subcontractor's acceptance of the applicable areas.

The drawings, details and specifications do not necessarily indicate or describe all work required for the full performance and completion of the requirements of the Contract Documents. This Subcontractor shall use all reasonable care to include those items necessary and/or implied to fill foreseeable gaps, omissions or conflicts that prevent a complete and functioning system even though it may not be detailed.

Provide all shop drawings, stamped drawings, calculations, submittals, samples, mock-ups, certificates, qualifications, etc. as required for approval by Architect/Engineer, and/or local governing authorities in a timely manner to avoid delaying the project.

6.0 CASEWORK AND COUNTERTOPS SCOPE OF WORK DESCRIPTION

6.0.1 This Subcontractor shall furnish all labor, materials, equipment, tools, taxes, lifting and hoisting, insurance, supervision, and any other incidentals necessary to provide a complete Casework and Countertop scope of work. This Subcontractor shall be responsible for all cabinets, cubbies, bunk cabinets, floating wall shelves, and sink/vanity aprons, fillers, hardware, etc. as specified in the contract documents, required by Authorities Having Jurisdiction, and AWI & WIC Standards. ~~as noted herein~~. The following scope items are not intended to be all-inclusive but are merely used to highlight some of the major scope items.

6.0.2 The scope of this Subcontract shall be in accordance with ADA and Fair Housing requirements, as well as in accordance with local authority having jurisdiction. Failure to comply with the ADA and Fair Housing regulations will require correction of work-in-place solely at the Subcontractor's expense. This Subcontractor shall notify the General Contractor of any potential problems prior to the installation of its scope of work.

6.0.3 This Subcontractor shall furnish and install all cabinets (uppers, lowers, etc. and standard, deep and HC sizes), countertops (plastic laminate~~, solid surface~~, quartz, metal casework, butcher block, cultured stone, etc.), millwork, vanity tops, quartz window sills, shelves, backsplashes, hardware, brackets, supports, corbels, fillers, shoe molds, trim, toe kick, surface blocking, covers, end panels, scribe, etc. to provide a complete cabinetry and countertop package, per the contract documents.

6.0.4 The installation of cabinets and countertops shall constitute acceptance of adjacent finishes and substrates by this Subcontractor. Subcontractor understands that cabinets and countertops shall be removed and reinstalled at no additional cost to General Contractor if corrections to adjacent finishes or substrates dictate such removal.

6.0.5 Subcontractor shall install cabinets and countertops plumb, true, and level. Further, Subcontractor shall furnish and install minimum fillers and moldings that fit neatly.

6.0.6 Subcontractor to include all open shelving including, but not limited to, the shelving in room 108 and other areas as per the contract documents.

6.0.7 Subcontractor shall install all cabinet components (drawers, doors, hinges, pull, etc.) level and

plumb in a manner that will allow for proper function of said components, per the approved cabinet shop drawings and contract documents.

6.0.8 Subcontractor shall provide complete cabinet and countertop layouts as part of the submittal process. These drawings will be strictly adhered to as part of this Subcontractor's installation process.

6.0.9 Subcontractor shall set nails in fillers, moldings, and toe kicks and fill holes with matching color putty.

6.0.10 All cut ends to be field treated / applied with laminate / stain to achieve the appropriate matching finish. No edges / cuts are to be left un-treated.

6.0.11 Color samples (countertops, vanity tops, plastic laminate, solid surface, stone, quartz, metal, butcher block etc.) and box cabinet construction samples are to be provided to the General Contractor for Owner Architect approval / selection.

6.0.12 Subcontractor shall be responsible for field measuring and coordinating with the General Contractor prior to installation to avoid any fabrication and corresponding installation issues in the field. Any issues that may arise during field measuring shall be issued to General Contractor in writing.

6.0.13 Provide all uniform cutouts for other trades' work. Escutcheons are by others.

6.0.14 All nail holes, screw holes, fastening points, etc. shall be filled and made ready to receive finish installed by others.

6.0.15 All cutouts for all plumbing, mechanical or electrical fixtures shall be by this trade if the fixture or a template is on site. All fixtures shall be furnished and installed by others.

6.0.16 This Subcontractor shall make all field modifications such as trimming and scribing necessary for a tight fit to similar or dissimilar surfaces.

6.0.17 All field measurements are by the subcontractor to ensure proper fit.

6.0.18 This subcontractor shall coordinate the installation of the work under this subcontract and verify blocking requirements with other trades and field conditions. Subcontractor to provide blocking layout for this scope of work at time of submittals.

6.0.19 All blocking not within wall shall be by this Subcontractor.

6.0.20 Subcontractor shall furnish and install base trim to match the cabinetry for all cabinets within this scope of work.

~~6.0.20~~6.0.21 This Subcontractor shall provide and install all miscellaneous rough carpentry as applicable to this scope of work.

~~6.0.21~~6.0.22 Subcontractor has included all shimming and/or installation of wood strips necessary for leveling of all cabinetry and countertops within this scope of work.

7.0 JOINT SEALANT SCOPE OF WORK DESCRIPTION

7.0.1 Joint Sealants – This Work shall include a complete Joint Sealant System, including but not limited to, all warranties, colored joint sealants to match this scope of work including miscellaneous joint sealants, cleaners, masking tape, accessory materials, etc. Include tooling, cleaning, and protection of all sealant joints. The Cabinet & Countertop Subcontractor shall be responsible for providing all joint sealants, etc. required to complete all work provided as part of this Subcontract, including but not limited to, providing joint sealant work where millwork cabinets, countertops, backsplashes, etc. abut the adjacent walls and floors.

7.0.2 Subcontractor shall caulk all back splashes installed under this subcontract to the wall and dissimilar surfaces.

12.0 COUNTERTOPS SCOPE OF WORK DESCRIPTION

12.0.1 Subcontractor has included all plastic laminate~~, solid surface~~, quartz, butcher block, metal/stainless, and cultured stone countertops to include all side and backsplashes as noted, per the contract documents.

12.0.2 Subcontractor has included all grommets as required, per the contract documents.

12.0.3 Subcontractor has included all steel countertop supports, per the contract documents.

12.0.4 Subcontractor shall coordinate and perform cutouts for all plumbing, mechanical or electrical fixtures. All fixtures shall be furnished and installed by others.

—OTHER SCHEDULE SUMMARY INFORMATION—

The Substantial Completion date for the Sitework Subcontractor is as reflected within the Construction Schedule. Special attention should be directed to the Construction Schedule for project sequencing requirements which are a requirement of this Scope of Work.

END OF SECTION
TRADE PACKAGE SCOPE OF WORK:
06D CABINETS AND COUNTERTOPS SUBCONTRACT

TRADE PACKAGE SCOPE OF WORK

07B MEMBRANE ROOFING AND 07C METAL SOFFIT, METAL ROOFING, GUTTERS & DOWNSPOUTS PACKAGE

Furnish all labor, materials, tools, taxes, safety, insurances, equipment, hoisting, cranes, supervision, and all other incidentals necessary to accomplish all **Membrane Roofing, Metal Roofing, Metal Soffit, and Gutters & Downspouts Package** Scope of Work in accordance with all Contract Documents and as defined within **Trade Package General Scope Requirements** and this Scope of Work.

Subcontractors/Suppliers performing work on multiple portions of the project site (i.e., buildings, parking area, site, etc.) shall provide separate equipment, hoisting, cranes, full-time English-speaking supervision including, but not limited to management, superintendent, on-site foreman, tradesman, laborers, etc. for each portion unless agreed to otherwise in writing by the General Contractor. If the project needs and schedule are not being met to the satisfaction of the General Contractor, written approval will be rescinded, and the original staffing requirements shall be provided by the Subcontractor.

Project Specifications for the **Membrane Roofing, Metal Roofing, Metal Soffit, and Gutters & Downspouts Package** Scope of Work are listed below. This Subcontractor or Supplier shall carefully examine all specification sections and drawings within the Contract Documents and be responsible for all work described within this Scope of Work and as required on the project.

PROJECT SPECIFICATIONS

This Subcontractor is responsible for all Division 01 - General Requirements as prepared by the Architect, Design Consultants, and/or General Contractor or as designated elsewhere within the Technical Specifications or Drawings as applicable to this Trade Package Scope of Work.

Primary Responsibility
This Subcontractor is responsible for all Primary Specification Responsibilities listed below unless this Scope of Work specifically states otherwise.

PRIMARY TECHNICAL SPECIFICATION RESPONSIBILITIES (PROJECT MANUAL)	
	Specifications and notes included on the Drawings.
~~07 11 13~~	~~Bituminous Dampproofing~~
071326	Self-Adhering Sheet Waterproofing
07 21 00	Thermal Insulation
~~07 41 13.16~~	~~Standing Seam Metal Roof Panels~~
07 41 12	Metal Roof Panels
~~07 42 13.53~~074293	Metal Soffit Panels
07 54 ~~19~~19	~~Polyvinyl Chloride (PVC) Roofing~~Polyvinyl Chloride (PVC) Roofing
076200	Sheet Metal Flashing and Trim
07 71 15	Manufactured Roof Specialties – Aluminum Copings

07 72 05	Roof Accessories

Secondary Responsibility

This Subcontractor is responsible for all Secondary Specification Responsibilities listed below to the extent applicable, or defined, within this Scope of Work.

SECONDARY TECHNICAL SPECIFICATION RESPONSIBILITIES	
Gen. Note	**This Subcontractor is responsible for complete Specifications package as it relates to the Membrane Roofing, Metal Roofing, Metal Soffit, and Gutters & Downspouts Package scope of work.**
Division 04	Masonry
Division 05	Metals
Division 07	Thermal and Moisture Protection
Division 09	Finishes
Division 21	Fire Suppression
Division 22	Plumbing
Division 23	Mechanical
Division 26	Electrical

The **Membrane Roofing, Metal Roofing, Metal Soffit, and Gutters & Downspouts Package** Subcontractor shall be responsible for complying with the requirements of each Scope of Work Description / Clarification Section listed below, **even if** those requirements are not shown within the Specification Sections listed above.

This Subcontractor shall be responsible for all Primary Specification Responsibilities identified above in their entirety. All costs associated with Primary Specification Responsibilities shall be included in this Subcontractor's Scope of Work and reflected in bid amount.

This Subcontractor shall be at least partially responsible for Secondary Specification Responsibilities identified above. The Secondary Specifications identify scopes of work for which this Subcontractor is not wholly responsible but shall be applicable as it relates to the execution of Primary Specification Responsibilities. This may include a varying degree of responsibility from simple coordination to performing entire portions of work. The Secondary Specifications are not intended to be all inclusive and shall not limit the Subcontractor in any way with regards to installation of work identified in Primary Specification Responsibilities.

The **Membrane Roofing, Metal Roofing, Metal Soffit, and Gutters & Downspouts Package** Subcontractor is responsible for all Work.

7.0 MEMBRANE ROOFING, METAL ROOFING, METAL SOFFIT, AND GUTTERS & DOWNSPOUTS PACKAGE SCOPE OF WORK DESCRIPTION

7.0.1 ~~PVC Membrane~~PVC Membrane Roofing System - This Work shall include providing a complete fully adhered ~~PVC Membrane~~ PVC Membrane Roofing System, including but not limited to, fasteners, ~~60 mil~~ sheet membrane as specified, rigid ~~polyisocyanurate~~ board insulation as specified, sloped tapered insulation, cover boards, bitumen, adhesives, base flashing, prefabricated roof insulation vents, vent through roof (VTR) flashings, prefinished snap-on or face leg hooked to continuous cleat metal copings, break metal, prefabricated boots, etc., compliance with uplift requirements, specified roof warranty, downspouts, gutters, U.L. requirements, sheet metal flashing, membrane flashing, roof curb flashing including counter flashing of prefabricated roof curbs, roof expansion joints, roof walkway pads, prefabricated cant strips, flood testing, etc., per the contract documents.

7.0.2 Insulation at ~~PVC Membrane~~Thermoplastic-Polyolefin Roofing – This Work shall include providing all built-up roofing rigid board insulation and associated adhesives, clips, fasteners, caulking compounds, tape, mastic, etc., per the contract documents.

7.0.3 ~~Standing Seam~~ Metal Roofing - This work shall include providing a complete weather- tight ~~Standing Seam~~ Metal Roof panel system including but not limited to, prefinished metal roofing panels, prefinished perforated soffit panels, high temp ice and water shield, continuous rigid insulation at specified locations, underlayment materials, protection boards, perlite boards, J trim, roof clips, roofing felt, metal fascia, ridge cap, touch-up paint, if required, valley flashing, trim, flashing, gutters, downspouts, gutter outlet strainers, other miscellaneous components, perimeter-flashing, closures, pre-finished metal fascia's, expansion joint covers, closure strips, sealant tape, sealants, mastic, thermal blocks, where required, and other miscellaneous components and materials to comprise a complete Standing Seam Metal roof panel system as designated within the Contract Documents.

7.0.4 Insulation at Metal Roofing – This Work shall include providing all standing seam metal roof rigid board insulation and associated adhesives, clips, fasteners, caulking compounds, tape, mastic, etc., at designated locations within the Contract Documents.

7.0.5 Roofing systems and components shall meet or exceed all performance requirements and ratings as specified in the contract documents and as required by local code and/or local authority having jurisdiction. This includes, but is not limited to: impact resistance, UL Class, wind design and uplift pressure, and fire resistance.

7.0.6 Self-Adhering, High-Temperature Sheet Underlayment –Subcontractor shall furnish and install all self-adhered, high-temperature sheet underlayment in accordance with and in locations as designated within the contract documents.

7.0.7 Sheet Metal Flashing, Trim, Manufactured Roof Accessories, and Roof Expansion Assemblies - This Work shall include providing all prefinished sheet metal flashing and trim work, manufactured roof accessories work and roof expansion assemblies work designated or required within the roof system, including but not limited to, exposed trim, formed aluminum gutters, formed aluminum downspouts, formed scuppers, downspout straps, formed aluminum gravel stops, drip edge, eave flashing, formed pre-finished copings, aluminum roof to wall expansion joint assemblies, aluminum roof to roof expansion joint assemblies, accessories, base flashing, epoxy seam sealers, joint sealants, adhesives, mastic sealants, asphalt mastic, fasteners, etc. as required to complete all sheet metal flashing, trim, manufactured roof accessories and roof expansion assemblies as designated within the Contract Documents. This Work shall also include providing all pre-molded flashing of all applicable roof penetrations, including but not limited to, roof drains, vent stacks, miscellaneous HVAC, plumbing, electrical, etc. roof penetrations, etc. specified to receive pre-molded flashing.

7.0.8 Subcontractor shall supply all requested material samples for review and selection at no additional cost. The color of metal shall be selected by the Architect and/or Owner from the manufacturer's full range of options.

7.0.9 Roof Openings – This Subcontractor shall make necessary cutouts/block-outs at all PVC membrane and metal roofing conditions requiring a cutout/block-out scheduled to receive work required of this subcontract or by other subcontractors at all project locations within the roof system being installed as part of this Scope of Work, per the contract documents. Cutouts/block-outs include openings required for all HVAC, plumbing, fire protection, and electrical work located at built-up roof areas. The respective trade subcontractor requiring a specific cutout/block-out will provide the size and location of these areas for this Subcontractor's installation.

7.0.10 Subcontractor shall seal any MEP roof penetrations per the manufacture's specifications and the contract documents.

~~7.0.11 This Subcontractor shall install the necessary roofing membrane, sealants, and flashing for proper integration of the Mezzanine door assembly provided and installed by others.~~

~~7.0.12~~7.0.11 Joint Sealants - This Work shall include a complete Joint Sealant System, including but not limited to, all specified pre-construction testing, warranties, elastomeric joint sealants, solvent-release-curing joint sealants, miscellaneous joint sealants, backing, primer, cleaners, bond breaker tape, masking tape, accessory materials, etc. as required to complete this Scope of Work per the contract documents. Include tooling, cleaning, and protection of all sealant joints.

~~7.0.13~~7.0.12 This Subcontractor shall coordinate its prefinished sheet metal work to ensure the same color of material as selected by the Designer is delivered and installed on site.

~~7.0.14~~7.0.13 Gutters & Downspouts – This Work shall include supply and install of all gutters and downspouts, per the contract documents. Subcontractor shall coordinate downspout locations

with the Contractor and Roof Leader Drainage System Subcontractor. Subcontractor acknowledges the contract documents may conflict with one another as they pertain to the downspout routing and roof leader drainage tie-in requiring additional and reasonable coordination. Subcontractor shall notify the Contractor prior to changes in routing.

~~7.0.15~~7.0.14 Warranty – This Subcontractor shall provide the specified roof material and installer warranties on the forms required within the Contract Documents.

~~7.0.16~~7.0.15 Final Cleaning – At project completion and before Owner Punch List this Subcontractor shall perform a final cleaning of all materials installed under this Subcontract. This shall include removing debris, dirt, stains, etc. from the Membrane Roofing, Metal Roofing, Metal Soffit, Coping, Gutters & Downspouts, etc. surfaces.

-OTHER SCHEDULE SUMMARY INFORMATION-

The Substantial Completion date for the Roofing Systems Package Subcontractor is as reflected within the Construction Schedule. Special attention should be directed to the Construction Schedule for project sequencing requirements which are a requirement of this Scope of Work.

END OF SECTION
TRADE PACKAGE SCOPE OF WORK:
MEMBRANE ROOFING, METAL ROOFING, METAL SOFFIT, AND GUTTERS & DOWNSPOUTS PACKAGE SUBCONTRACT

TRADE PACKAGE SCOPE OF WORK

07D SIDING SUBCONTRACT

Furnish all labor, materials, tools, taxes, safety, insurances, equipment, hoisting, cranes, supervision, and all other incidentals necessary to accomplish all **Siding** Subcontract Work in accordance with all Contract Documents and as defined within **Trade Package General Scope Requirements** and this Scope of Work.

Subcontractors/Suppliers performing work on multiple portions of the project site (i.e., buildings, parking area, site, etc.) shall provide separate equipment, hoisting, cranes, full-time English-speaking supervision including, but not limited to management, superintendent, on site foreman, tradesman, laborers, etc. for each portion unless agreed to otherwise in writing by the General Contractor. If the project needs and schedule are not being met to the satisfaction of the General Contractor, written approval will be rescinded, and the original staffing requirements shall be provided by the Subcontractor.

Project Specifications for the **Siding** Scope of Work are listed below. This Subcontractor or Supplier shall carefully examine all specification sections and drawings within the Contract Documents and be responsible for all work described within this Scope of Work and as required on the project.

PROJECT SPECIFICATIONS

This Subcontractor is responsible for all Division 1 - General Requirements as prepared by the Architect, Design Consultants, and/or General Contractor or as designated elsewhere within the Technical Specifications or Drawings as applicable to this Trade Package Scope of Work.

Primary Responsibility
This Subcontractor is responsible for all Primary Specification Responsibilities listed below unless this Scope of Work specifically states otherwise.

PRIMARY TECHNICAL SPECIFICATION RESPONSIBILITIES (PROJECT MANUAL)	
Gen. Note	**Specifications are included on the Drawings**
07 46 00	Siding (Fiber Cement)
07 62 00	Sheet Metal Flashing and Trim
07 92 00	Joint Sealants

Secondary Responsibility
This Subcontractor is responsible for all Secondary Specification Responsibilities listed below to the extent applicable, or defined, within this Scope of Work.

SECONDARY TECHNICAL SPECIFICATION RESPONSIBILITIES	
	Specifications are included on the Drawings
Gen. Note	**This Subcontractor is responsible for complete Specifications package as it relates to the Plumbing Systems Scope of Work.**

Division~~i.~~ 4	Masonry
Division~~.~~ 6	Wood, Plastics, and Composites
Division~~.~~ 7	Thermal and Moisture Protection
Division 9	Finishes

The **Siding** Subcontractor shall be responsible for complying with the requirements of each Scope of Work Description / Clarification Section listed below, **even if** those requirements are not shown within the Specification Sections listed above.

This Subcontractor shall be responsible for all Primary Specification Responsibilities identified above in their entirety. All costs associated with Primary Specification Responsibilities shall be included in this Subcontractor's Scope of Work and reflected in bid amount.

This Subcontractor shall be at least partially responsible for Secondary Specification Responsibilities identified above. The Secondary Specifications identify work scopes for which this Subcontractor is not wholly responsible but shall be applicable as it relates to the execution of Primary Specification Responsibilities. This may include a varying degree of responsibility from simple coordination to performing entire portions of work. The Secondary Specifications are not intended to be all inclusive and shall not limit the Subcontractor in any way with regards to installation of work identified in Primary Specification Responsibilities.

The **Siding** Subcontractor is responsible for all Work.

6.0 WOOD, PLASTICS, AND COMPOSITES SCOPE OF WORK DESCRIPTION

6.0.1 Wood Blocking – This Subcontractor shall coordinate all necessary blocking/backing required for this Scope of Work with the General Contractor, Metal Framing, Insulation, Drywall, and Acoustical Ceiling Subcontractor, and Rough Carpentry Subcontractor to not impede siding installation. Subcontractor shall be responsible for communicating and coordinating all required blocking/backing per the manufacturer whether shown within the contract documents or not. Wood blocking / backing to be installed by others.

7.0 THERMAL AND MOISTURE PROTECTION SCOPE OF WORK DESCRIPTION

7.0.1 Subcontractor shall furnish all labor, materials, equipment, tools, taxes, hoisting, lifting, insurance, warranties, and any other incidentals necessary to provide a complete Siding scope of work as specified by the contract documents, authorities having jurisdiction, and noted herein.

7.0.2 Siding – This work shall include a complete Siding Package, including but not limited to, lap siding, shingle siding, vertical siding with battens, smooth batten boards, panel vertical siding, fascia, frieze, trim blocks, plinth blocks, flashing, z-flashing, joint flashing, fasteners, etc. as required for a complete turnkey Siding scope of work, per the contract documents. No rainscreen or PT furring to be installed, full warranty shall be provided without rainscreen.

7.0.3 Subcontractor has included furnish and install of James Hardie ColorPlus materials with caulking and touch-up paint, per the manufacturer's recommendations and contract documents.

7.0.4 Subcontractor has included furnish and install of PVC trim, per the contract documents.

7.0.5 Subcontractor to furnish and install fasteners per manufacturer's recommendations and the contract documents. Over driving and under driving of fasteners will be the responsibility of this Subcontractor to remedy.

7.0.6 Subcontractor shall perform this scope of work in a manner as to not damage the weather barrier. Subcontractor shall notify the General Contractor of damage to weather barrier if incident occurs, or damage is noticed. Subcontractor shall be responsible for the repair of any weather barrier required due to damage by this Subcontractor.

7.0.7 Subcontractor shall furnish and install this scope of work plumb, level, and ensure all material is new, clean, and free of defects and damage.

7.0.8 Subcontractor shall provide all secondary materials required to install this scope of work, per the manufacturer's recommendations and the contract documents.

7.0.9 Subcontractor shall furnish and install an approved primer and shall be responsible for painting all cut ends of siding, panels, and trims as recommended/required by the manufacturer and contract documents.

7.0.10 Subcontractor shall furnish and install plinth blocks, including but not limited to, all exterior light fixtures, receptacles, switches, vents, pipe penetrations, alarms, fire bells, etc. The block shall be large enough for covers and base plates to sit fully on the block with necessary reveals. All wires are to be pulled thru, so fixture when installed on plinth block is on one (1) piece of siding. This Subcontractor shall be responsible for coordinating locations and sizes of the plinth blocks with General Contractor and associated Subcontractors. This Subcontractor shall install flashing over all plinth blocks as required, per the contract documents and manufacturer.

7.0.11 Subcontractor has included the necessary mobilizations to install roof fascia and trim boards prior to roofing, etc. install for proper sequencing at General Contractor's direction.

7.0.12 Subcontractor will utilize the proper dust collection devices on their saws and wear proper ventilation masks in accordance with OSHA regulation when working with fiber cement materials.

7.0.13 Subcontractor shall execute a "mockup" for this scope of work, per the contract documents.

7.0.14 Flashing – This work shall include a complete Flashing Package, including but not limited to, pre-finished metal flashing, of doors, windows, siding joints (horizontal and vertical), trim joints, transitions to dissimilar materials, louvers, vents, electrical, mechanical, plinth blocks, etc. to ensure weather tightness, per the manufacturer's recommendations and contract documents.

Subcontractor shall furnish and install all integral sealants, per the manufacturer's recommendations and contract documents. Subcontractor shall provide proper joints and flashing sizes as joints will vary based on location and adjacent materials. Full color range of flashing to be submitted for selection by the Owner and Architect.

7.0.15 Subcontractor shall furnish all field bent flashings at recommended flashing locations per the manufacturer and contract documents, including, but not limited to, head flashing, metal flashing between dissimilar materials and at all other horizontal or vertical trim or joints as required for the siding scope of work, which may be in addition to the plan details or areas or reasonably inferred locations. All flashing shall have hemmed edges. This also includes caulking end dams of metal flashing.

7.0.16 Joint Sealants - This work shall include a complete Joint Sealant System, including but not limited to, all specified warranties, sealants, backing, primer, cleaners, bond breaker tape, masking tape, accessory materials, etc. that are integral to the siding scope and associated flashings, per the contract documents. Include tooling, cleaning, and protection of all sealant joints.

7.0.17 Subcontractor is responsible for sealant of joints between this scope of work and dissimilar materials, per the manufacturer's recommendations and contract documents.

—OTHER SCHEDULE SUMMARY INFORMATION—

The Substantial Completion date for the Sitework Subcontractor is as reflected within the Construction Schedule. Special attention should be directed to the Construction Schedule for project sequencing requirements which are a requirement of this Scope of Work.

END OF SECTION
TRADE PACKAGE SCOPE OF WORK:
22A PLUMBING SYSTEMS SUBCONTRACT

TRADE PACKAGE SCOPE OF WORK

08A HOLLOW METAL DOOR, FRAME, AND HARDWARE SUBCONTRACT

Furnish all labor, materials, tools, taxes, safety, insurances, equipment, hoisting, cranes, supervision, and all other incidentals necessary to accomplish all **Hollow Metal Door, Frame, and Hardware** Subcontract Work in accordance with all Contract Documents and as defined within **Trade Package General Scope Requirements** and this Scope of Work.

Subcontractors/Suppliers performing work on multiple portions of the project site (i.e., buildings, parking area, site, etc.) shall provide separate equipment, hoisting, cranes, supervision including, but not limited to management, superintendent, foreman, tradesman, laborers, etc. for each portion unless agreed to otherwise in writing by the General Contractor. If the project needs and schedule are not being met to the satisfaction of the General Contractor, written approval will be rescinded, and the original staffing requirements shall be provided by the Subcontractor.

Project Specifications for the **Hollow Metal Door, Frame, and Hardware** Subcontract Scope of Work are listed below. This Subcontractor or Supplier shall carefully examine all specification sections and drawings within the Contract Documents and be responsible for all work described within this Scope of Work and as required on the project.

PROJECT SPECIFICATIONS

This Subcontractor is responsible for all Division 01 - General Requirements as prepared by the Architect, Design Consultants, and/or General Contractor or as designated elsewhere within the Technical Specifications or Drawings as applicable to this Trade Package Scope of Work.

DIVISION 01 – GENERAL REQUIRMENTS	
GC Req.	General Requirements Manual
GC Req.	Trade Package Scope Manual
GC Req.	Trae Package General Scope Requirements
Division 01	All Division 01 Specification as Required by Samet Corporation

Primary Responsibility
This Subcontractor is responsible for all Primary Specification Responsibilities listed below unless this Scope of Work specifically states otherwise.

PRIMARY TECHNICAL SPECIFICATION RESPONSIBILITIES (PROJECT MANUAL)	
	Specifications are included on the Drawings
08-11-13	Hollow Metal Doors and Frames
08-14-16	Flush Wood Doors
~~08 31 13~~	~~Access Doors and Frames – Non-Rated~~
~~08 31 13~~	~~Access Doors and Frames~~

~~08 35 00~~	~~Electric Four-Fold Bay Doors~~
~~08 36 20~~	~~Sectional Overhead Doors – F.D. High Lift Aluminum-Glass-Electric~~
~~08 41 13~~	~~Aluminum- Framed Entrances and Storefronts TrFab VG 451/451 T~~
08 71 00	Door Hardware
08 80 00	Glazing
08 83 00	Mirrors
08 91 19	Fixed Louvres

Secondary Responsibility

This Subcontractor is responsible for all Secondary Specification Responsibilities listed below to the extent applicable, or defined, within this Scope of Work.

SECONDARY TECHNICAL SPECIFICATION RESPONSIBILITIES	
	Specifications are included on the Drawings
Gen. Note	**This Subcontractor is responsible for complete Specifications package as it relates to the Hollow Metal Door, Frame, & Hardware Package scope of work.**
Division 03	Concrete
Division 04	Masonry
Division 05	Metals
Division 07	Thermal Moistures
Division 08	Openings
Division 09	Finishes
Division 26	Electrical

The **Hollow Metal Door, Frame, and Hardware** Subcontractor shall be responsible for complying with the requirements of each Scope of Work Description / Clarification Section listed below, **even if** those requirements are not shown within the Specification Sections listed above.

This Subcontractor shall be responsible for all Primary Specification Responsibilities identified above in their entirety. All costs associated with Primary Specification Responsibilities shall be included in this Subcontractor's Scope of Work and reflected in bid amount.

This Subcontractor shall be at least partially responsible for Secondary Specification Responsibilities identified above. The Secondary Specifications identify work scopes for which this Subcontractor is not wholly responsible but shall be applicable as it relates to the execution of Primary Specification Responsibilities. This may include a varying degree of responsibility from simple coordination to performing entire portions of work. The Secondary Specifications are not intended to be all inclusive and shall not limit the Subcontractor in any way with regards to installation of work identified in Primary Specification Responsibilities.

The **Hollow Metal Door, Frame, and Hardware** Subcontractor is responsible for all Work described herein and below unless specifically noted otherwise.

See below for all safety submittals required throughout the duration of the project:

8.0 HOLLOW METAL DOOR, FRAME, & HARDWARE SCOPE OF WORK DESCRIPTION

8.0.1 Hollow Metal Doors and Frames - This Work shall include **furnishing and installing** materials (installation of hollow metal door frames by others) for a complete hollow metal door and hollow metal frame package, including but not limited to, all hollow metal doors, door louvers including insect screens, where required, welded hollow metal frames, sealants, jamb anchors, floor anchors, door louvers where required, accessories and miscellaneous incidentals for a complete steel hollow metal door and hollow metal frame system, per the contract documents. All hollow metal doors shall be pre-machined to accept finish hardware, door louvers, where required, etc. per the contract documents.

8.0.2 Flush Wood Doors - This Work shall include **furnishing and installing** materials for a complete flush wood door system, including but not limited to, all wood doors, glass lite frames and moldings, accessories and miscellaneous incidentals for a complete flush wood door system, per the contract documents. All wood doors shall be pre-machined to accept finish hardware, glass lite frames, door louvers where required, etc. and shall be factory finished, per the contract documents.

8.0.3 Door Hardware - This Work shall include **furnishing and installing** materials for a complete door hardware system, including but not limited to, all specified warranties, all hinges, key cabinet, lock cylinders and keys, lock and latch sets, bolts, mortise locksets and latch sets, exit devices, push/pull units, closers, overhead holders, miscellaneous door control devices, protection plates, weather-stripping for exterior doors, sound stripping for interior doors, silencers, floor stops and wall bumpers, automatic door seals (door bottoms), astragals or meeting seals on pairs of doors, thresholds, maintenance parts kits for locksets, door closers, fasteners, temporary cylinder inserts for construction use, keys, etc. for a complete door hardware system, per the contract documents. All construction and permanent cylinders for hollow metal and wood doors shall be furnished and installed by this Subcontractor.

8.0.4 Subcontractor shall furnish and install all glass and glazing associated with this scope of work tempered, impact rated, fire rated, etc. per the contract documents.

8.0.5 Subcontractor shall supply all electrified door hardware including but not limited to strikes, hold opens, etc. All electrified door hardware shall be **furnished and installed** as part of this Scope of Work.

8.0.6 All materials (including all hollow metal frames) shall be clearly labeled and marked using door opening designations per the contract documents by this Subcontractor for ease of coordination and installation by this Subcontractor and others.

8.0.7 Subcontractor to verify all fire-ratings, throat sizes, jamb widths, door sizes, hardware prep, etc. prior to placing any orders for the applicable door package. It shall also be the responsibility of this Subcontractor to provide and verify all rough-openings prior-to and during the structural masonry

and cold-formed metal framing stages of this project. This Subcontractor shall account for all details that may impact the rough opening sizes.

8.0.8 Provide installation of all required astragals, thresholds, sweeps, weather-stripping, gaskets, seals, smoke stops, louvers as required, and all other door accessories as indicated, per the contract documents.

8.0.9 This Subcontractor shall furnish, deliver, receive, and distribute all doors, frames, and hardware as necessary for facilitation of this scope of work.

8.0.10 This Subcontractor shall install door number labels on all door frames on the top butt hinge location when directed by the Contractor.

8.0.11 Provide Construction Key System as doors are installed in accordance with the Contract Documents. Provide means to lock the building as exterior doors are installed before permanent door hardware is installed. Subcontractor to install permanent cylinders at turnover and provide keys directly to the Owner. Keying shall be coordinated with the contract documents and the Owner.

8.0.12 Furnish and install door silencers prior to grouting door frames if preferred. Remove silencers to allow painting of frames to be completed as directed by the Contractor. Furnish and re-install all door silencers and gasketing after painting has been completed and when directed by the Contractor. If silencers must be installed during door installation to properly adjust the door, then this Subcontractor will include providing silencers again after paint work. This Subcontractor will be responsible for securing and protecting removed silencers. No reimbursement will be provided for lost or damaged silencers by the Contractor or Owner.

8.0.13 All doors and hardware shall be verified for proper orientation and adjusted during installation and adjusted again following completion of final HVAC test & balancing. All doors and hardware will be reviewed and adjusted prior to final building turnover to the owner and again six months after substantial completion in strict accordance with the Contract Documents. These four (4) checks and adjustments shall be included in this Scope of Work. If more stringent requirements are specified, the most stringent requirement shall govern, per the contract documents.

8.0.14 Provide for the undercut of doors as indicated for flooring requirements or air flow needs, per the contract documents. This Subcontractor is responsible for the modification of doors to accommodate undercut needs. Coordinate undercut of doors with pressurization requirements and local and state codes.

8.0.15 Exterior Doors frames and hardware shall be expedited for building close-up and security.

8.0.16 Temporary doors and hardware for all electrical, mechanical, and elevator equipment rooms shall be included in this Subcontract. Temporary doors and hardware shall be installed at the same time as the exterior doors.

8.0.17 Door frames for CMU walls shall be expedited to ensure delivery of frames to meet masonry schedule requirements. Costs to accelerate frames shall be by this Subcontractor. ~~Subcontractor.~~

—OTHER SCHEDULE SUMMARY INFORMATION—

The Substantial Completion date for the **Hollow Metal Frame, Door, & Hardware** Subcontractor is as reflected within the Construction Schedule. Special attention should be directed to the Construction Schedule for project sequencing requirements which are a requirement of this Scope of Work.

END OF SECTION
TRADE PACKAGE SCOPE OF WORK:
08A HOLLOW METAL FRAME, DOOR, & HARDWARE SUBCONTRACT

TRADE PACKAGE SCOPE OF WORK

08B STOREFRONTS – GLAZING SUBCONTRACT

Furnish all labor, materials, tools, taxes, safety, insurances, equipment, hoisting, cranes, supervision, and all other incidentals necessary to accomplish all **Storefronts - Glazing** Subcontract Work in accordance with all Contract Documents and as defined within **Trade Package General Scope Requirements** and this Scope of Work.

Subcontractors/Suppliers performing work on multiple portions of the project site (i.e., buildings, parking area, site, etc.) shall provide separate equipment, hoisting, cranes, supervision including, but not limited to management, superintendent, foreman, tradesman, laborers, etc. for each portion unless agreed to otherwise in writing by the General Contractor. If the project needs and schedule are not being met to the satisfaction of the General Contractor, written approval will be rescinded, and the original staffing requirements shall be provided by the Subcontractor.

Project Specifications for the Aluminum-Framed Entrances and Storefronts Subcontract Scope of Work are listed below. This Subcontractor or Supplier shall carefully examine all specification sections and drawings within the Contract Documents and be responsible for all work described within this Scope of Work and as required on the project.

PROJECT SPECIFICATIONS

This Subcontractor is responsible for all Division 01 - General Requirements as prepared by the Architect, Design Consultants, and/or General Contractor or as designated elsewhere within the Technical Specifications or Drawings as applicable to this Trade Package Scope of Work.

DIVISION 01 – GENERAL REQUIRMENTS	
GC Req.	General Requirements Manual
GC Req.	Trade Package Scope Manual
GC Req.	Trae Package General Scope Requirements
Division 01	All Division 01 Specification as Required by Samet Corporation

Primary Responsibility

This Subcontractor is responsible for all Primary Specification Responsibilities listed below unless this Scope of Work specifically states otherwise.

PRIMARY TECHNICAL SPECIFICATION RESPONSIBILITIES (PROJECT MANUAL)	
	Specifications are included on the Drawings
Gen. Note	**This Subcontractor is responsible for complete Specifications package as it relates to the Storefronts – Glazing Package scope of work.**
08-41-13	Aluminum-Framed Entrances and Storefronts
087100	Door Hardware

08-80-00	Glazing

Secondary Responsibility
This Subcontractor is responsible for all Secondary Specification Responsibilities listed below to the extent applicable, or defined, within this Scope of Work.

SECONDARY TECHNICAL SPECIFICATION RESPONSIBILITIES	
	Specifications are included on the Drawings
Gen. Note	**This Subcontractor is responsible for complete Specifications package as it relates to the Storefronts - Glazing Package scope of work.**
Division 03	Concrete
Division 04	Masonry
Division 05	Metals
Division 06	Wood, Plastics, and Composites
Division 07	Thermal and Moistures ~~Protection~~
Division 08	Openings
Division 09	Finishes
Division 26	Electrical

The **Storefronts – Glazing** Subcontractor shall be responsible for complying with the requirements of each Scope of Work Description / Clarification Section listed below, **even if** those requirements are not shown within the Specification Sections listed above.

This Subcontractor shall be responsible for all Primary Specification Responsibilities identified above in their entirety. All costs associated with Primary Specification Responsibilities shall be included in this Subcontractor's Scope of Work.

This Subcontractor shall be at least partially responsible for Secondary Specification Responsibilities identified above. The Secondary Specifications identify scopes of work for which this Subcontractor is not wholly responsible but shall be applicable as it relates to the execution of Primary Specification Responsibilities. This may include a varying degree of responsibility from simple coordination to performing entire portions of work. The Secondary Specifications are not intended to be all inclusive and shall not limit the Subcontractor in any way with regards to installation of work identified in Primary Specification Responsibilities.

The **Storefronts - Glazing** Subcontractor is responsible for all Work.

7.0 THERMAL AND MOISTURE PROTECTION SCOPE OF WORK DESCRIPTION

7.0.1 Joint Sealants - Joint sealant work required of this Subcontract includes all caulking / sealants at the interior and exterior perimeter of all aluminum storefront frames, aluminum windows, and/or at edge of slab conditions as required, per the contract documents and manufacturer's recommendations. Manufacturer's recommendations and warranty shall supersede.

7.0.2 Subcontractor shall provide and install all factory sub-sills, pans, flashings, etc. per the contract documents and manufacturer's recommendations.

7.0.3 Subcontractor shall provide continuous frame fillers for continuous support of backer rod and sealant, per the contract documents.

8.0 ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS SCOPE OF WORK DESCRIPTION

8.0.1 Aluminum Entrances, Storefronts, Aluminum Windows, Aluminum Clad Windows, and Glazing - Subcontractor shall furnish and install a full and complete impact tested and thermally broken exterior storefront and glazing system, per the contract documents and manufacturer's recommendations. Scope of work to include applicable reinforcing, blocking required for storefront system, fasteners, anchors, attachment devices, and all other accessories necessary to complete this scope of work. Provide all shop drawings, manufacturer's warranties, etc. as designated within the Contract Documents.

8.0.2 Door Hardware - This Work shall include furnishing and installing a complete door hardware system for Storefronts and Glazing provided and installed as a part of this Scope of Work, including but not limited to, all specified warranties, all hinges, lock and latch sets, bolts, mortise locksets and latch sets, exit devices, push/pull units, closers, overhead holders, miscellaneous door control devices, protection plates, weather stripping for exterior doors, sound stripping for interior doors, silencers, floor stops and wall bumpers, automatic door seals (door bottoms), gasketing, astragals or meeting seals on pairs of doors, thresholds, maintenance parts kits for locksets, door closers, fasteners, temporary cylinder inserts for construction use, etc. for a complete door hardware system, per the contract documents. Door Hardware Schedule shall be per the Contract Documents.

8.0.3 Electrified Door Hardware System – This Work shall include furnishing and installing all electrified door hardware components and accessories as required to make the aluminum doors completely functional after the completion of this Work. High voltage raceways, wiring, and final connections will be provided to the heads of these doors by the Electrical Subcontractor and is not part of this Scope of Work. This Subcontractor shall carefully coordinate this scope of work with the Drywall, Metal Studs, Insulation, and Acoustical Ceilings Subcontractor, Masonry Subcontractor, and Electrical Subcontractor to ensure the electrified Door Hardware is properly installed in accordance with the manufacturer's recommendations. Reference the contract documents and reviewed submittals for specific door locations having low voltage access control, per the contract documents.

8.0.4 All elements of the storefront system and glazing shall meet the applicable ratings and performance requirements stated in the contract documents, including air and water infiltration, structural requirements, thermal requirements, safety requirements, and must meet all applicable testing requirements.

8.0.5 Subcontractor shall coordinate all keying for this scope of work with the Owner, Architect,

Contractor, and the contract documents. Subcontractor shall provide keys for this scope of work.

8.0.6 Any damaged panels and or glass should be reported to the Contractor's Project Superintendent immediately; otherwise, this Subcontractor will be the responsible party until all pieces are installed and signed off by the General Contractor's project superintendent.

8.0.7 This Subcontractor shall receive, unload, and handle material for this scope of work with its own forces.

8.0.8 Provide and install all aluminum windows complete including but not limited to all extruded aluminum frame members, sub-sills, glazing gaskets, removable stops, joint sealant, glass, and fasteners, per the contract documents.

8.0.9 Include all required structural calculation sealed by a registered engineer licensed in North Carolina for all windows and storefront.

8.0.10 Aluminum window units shall meet or exceed all air infiltration tests, water resistance tests, and condensation resistance tests.

8.0.11 In the event replacement of damaged units is required, this Subcontractor shall provide temporary enclosures between the time of removing the existing windows and installing and sealing the new ones.

8.0.12 The Subcontractor shall include conducting all required tests and mockup assemblies and coordinating same with other related trades, per the contract documents.

8.0.13 Subcontractor has included the installation of plywood in window and door openings as required, if Subcontractor's glazing is delayed and the delay of such is the cause of this Subcontractor.

8.0.14 Provide attic stock materials in accordance with the contract documents. Including delivery and off-loading to a designated area or location.

8.0.15 All bent metal and/or break metal including sills, closures, trim, drips, etc. shall be provided as required for a complete and finished installation, per the contract documents and manufacturer's recommendations.

8.0.16 Subcontractor shall provide ~~a 10"~~ ADA compliant hardware ~~bottom rail at all doors~~ per the contract documents.

8.0.17 Subcontractor shall install the Storefront System per the manufacturer's specifications. All glass must be plumb, level, and shimmed so that operation of Storefront Doors and any windows is smooth and that latches work properly (nonbinding). Panel reveals should be equal around all openings.

8.0.18 Provide final adjustment of doors and hardware just prior to Final Occupancy as is acceptable to

the General Contractor and the Owner.

8.0.19 Subcontractor shall facilitate all field measuring prior to putting storefront systems into production. Subcontractor is also responsible for measuring and ordering proper size glass/glazing. General Contractor to provide Subcontractor adequate time to field measure. Should the schedule not allow time and field measurements, the General Contractor and Subcontractor will coordinate guaranteed rough openings per the approved storefront shop drawings.

8.0.20 Included in this Scope of Work are all required trips to review and document all openings prior to scheduled installation date. This Subcontractor will verify all framed opening for squareness, plumbness and acceptance of substrate for proper installation of the Work.

8.0.21 Coordinate with appropriate Subcontractors as required for rough-in of raceways, wiring, etc. at doors and frames furnished and installed under this Scope of Work. This Subcontractor shall cut all holes in aluminum framing systems required for rough-in by others. Layout will be by respective Subcontractors.

8.0.22 Subcontractor shall coordinate with all Subcontractors whose work is directly attached to the systems provided in this Scope of Work.

8.0.23 Subcontractor shall remove all stickers and sticker residue from its product at completion of its scope of work and shall verify prior to demobilization that its product is free and clear of any scratches, dents, or other defects.

—OTHER SCHEDULE SUMMARY INFORMATION—

The Substantial Completion date for the **Storefronts and Glazing** Subcontractor is as reflected within the Construction Schedule. Special attention should be directed to the Construction Schedule for project sequencing requirements which are a requirement of this Scope of Work.

END OF SECTION
TRADE PACKAGE SCOPE OF WORK:
08B STOREFRONTS AND GLAZING SUBCONTRACT

TRADE PACKAGE SCOPE OF WORK

08D OVERHEAD SECTIONAL & ELECTRIC FOUR-FOLD DOORS SUBCONTRACT

Furnish all labor, materials, tools, taxes, safety, insurances, equipment, hoisting, cranes, supervision, and all other incidentals necessary to accomplish all **Overhead Sectional & Electric Four-Fold Doors** Work in accordance with all Contract Documents and as defined within **Trade Package General Scope Requirements** and this Scope of Work.

Subcontractors/Suppliers performing work on multiple portions of the project site (i.e., buildings, parking area, site, etc.) shall provide separate equipment, hoisting, cranes, supervision including, but not limited to management, superintendent, foreman, tradesman, laborers, etc. for each portion unless agreed to otherwise in writing by the General Contractor. If the project needs and schedule are not being met to the satisfaction of the General Contractor, written approval will be rescinded, and the original staffing requirements shall be provided by the Subcontractor.

Project Specifications for the **Overhead Sectional & Electric Four-Fold Doors** Scope of Work are listed below. This Subcontractor or Supplier shall carefully examine all specification sections and drawings within the Contract Documents and be responsible for all work described within this Scope of Work and as required on the project.

PROJECT SPECIFICATIONS

This Subcontractor is responsible for all Division 01 - General Requirements as prepared by the Architect, Design Consultants, and/or General Contractor or as designated elsewhere within the Technical Specifications or Drawings as applicable to this Trade Package Scope of Work.

DIVISION 01 – GENERAL REQUIRMENTS	
GC Req.	General Requirements Manual
GC Req.	Trade Package Scope Manual
GC Req.	Trae Package General Scope Requirements
Division 01	All Division 01 Specification as Required by Samet Corporation

Primary Responsibility

This Subcontractor is responsible for all Primary Specification Responsibilities listed below unless this Scope of Work specifically states otherwise.

PRIMARY TECHNICAL SPECIFICATION RESPONSIBILITIES (PROJECT MANUAL)	
	Specifications and notes included on the Drawings.
08-35-00	Electric Four-Fold Bay Doors
08-36-20	Sectional Overhead Doors – F.D. – High Lift- Aluminum – Glass – Electric

Secondary Responsibility

This Subcontractor is responsible for all Secondary Specification Responsibilities listed below to the extent applicable, or defined, within this Scope of Work.

SECONDARY TECHNICAL SPECIFICATION RESPONSIBILITIES	
Gen. Note	**This Subcontractor is responsible for complete Specifications package as it relates to the Overhead Sectional Doors scope of work.**
Division 03	Concrete
Division 04	Masonry
Division 05	Metals
Division 06	Wood, Plastics, and Composites
Division 07	Thermal Moistures
Division 08	Openings
Division 23	Mechanical
Division 26	Electrical

The **Overhead Sectional & Electric Four Fold Doors** Subcontractor shall be responsible for complying with the requirements of each Scope of Work Description / Clarification Section listed above, **even if** those requirements are not shown within the Specification Sections listed above.

This Subcontractor shall be responsible for all Primary Specification Responsibilities identified above in their entirety. All costs associated with Primary Specification Responsibilities shall be included in this Subcontractor's Scope of Work and reflected in bid amount.

This Subcontractor shall be at least partially responsible for Secondary Specification Responsibilities identified above. The Secondary Specifications identify scopes of work for which this Subcontractor is not wholly responsible but shall be applicable as it relates to the execution of Primary Specification Responsibilities. This may include a varying degree of responsibility from simple coordination to performing entire portions of work. The Secondary Specifications are not intended to be all inclusive and shall not limit the Subcontractor in any way with regards to installation of work identified in Primary Specification Responsibilities.

The **Overhead Sectional & Electric Four Fold Doors** Subcontractor is responsible for all Work.

6.0 WOOD, PLASTICS, AND COMPOSITES SCOPE OF WORK DESCRIPTION

6.0.1 Wood Blocking - This Subcontractor shall furnish and install all wood blocking and supports required to support all items provided in this Scope of Work. This Subcontractor shall coordinate with the necessary subcontractors and General Contractor to ensure the finished product aligns with the project documents.

8.0 OVERHEAD SECTIONAL & Electric Four Fold DOORS SCOPE OF WORK DESCRIPTION

8.0.1 The drawings, details, and specifications do not necessarily indicate or describe all work required for the full performance and completion of the requirements of the Contract Documents. This Subcontractor shall use all reasonable care to include those items necessary and/or implied to fill

foreseeable gaps, omissions, or conflicts that prevent a complete and functioning system even though it may not be detailed.

8.0.2 Overhead Section Doors – This Subcontractor shall furnish and install all Electrically Operated Sectional Overhead Doors in accordance with the contract documents. This Work shall include all specified overhead sectional doors, guides, tracks, hoods, operators, motors, controls, locking devices, weather seals, safety sensors, bottom bars, brackets, glazing, stiles, rails, etc. per the contract documents.

8.0.3 Electric Four Fold Bay Doors - This Subcontractor shall furnish and install all Electrically Operated Four Fold Doors in accordance with the contract documents. This Work shall include all specified overhead sectional doors, guides, tracks, hoods, operators, motors, controls, locking devices, weather seals, safety sensors, bottom bars, brackets, glazing, stiles, rails, etc. per the contract documents.

~~8.0.2~~8.0.4

~~8.0.3~~8.0.5 Doors shall be complete with all necessary hardware, locking devices, counterbalance mechanism, signage, electric door operators, controls, and other items necessary for a complete operating system, per the contract documents.

~~8.0.4~~8.0.6 This Subcontractor shall provide a minimum of four (4) keys for each door, etc. If additional keys are required by the Contract Documents, this Subcontractor shall be responsible for whichever requirement is more stringent.

~~8.0.5~~8.0.7 Electrical Connections – The Electrical Subcontractor shall supply and install conduit and wire to land the line side high voltage to each door. The Overhead Sectional & Electric Four Fold Doors Subcontractor shall supply and install all other items necessary to provide a complete and operational system including but not limited to all low voltage conduit, boxes, wiring, and connections, per the contract documents.

~~8.0.6~~8.0.8 This Subcontractor shall furnish and install all required supports and seismic restraints for scope of work, including but not limited to, anchor bolts, hangers, isolators, channels, angles, embeds, miscellaneous tubes, plates, or any other engineered support required to provide for a complete and operating system.

~~8.0.7~~8.0.9 This Subcontractor shall coordinate electrical requirements with the Electrical Subcontractor and the General Contractor, per the contract documents, prior to ordering materials for this scope of work.

~~8.0.8~~8.0.10 Overhead Sectional & Electric Four Fold Doors shall comply with wind, seismic, impact resistance, structural limits, etc. performance requirements specified by the contract documents without failure due to defective manufacturer, fabrication, installation, or other defects in construction.

~~8.0.9~~8.0.11 Overhead Sectional & Electric Four Fold Doors shall comply with air infiltration and

thermal value requirements, per the contract documents.

—ALTERNATES—

Each alternate designated below has been separated into the following three categories:

- "Accepted" – Alternate was accepted by General Contractor and the dollar value for the alternate is included within the Subcontractor Amount.
- "Pending" – Alternate is pending award by General Contractor with the decision being deferred until the date defined within each applicable Alternate. This cost is NOT included in the Subcontractor Amount.
- "Declined" – Alternate was NOT accepted by General Contractor and the dollar value for the alternate is NOT included within the Subcontractor Amount. By declining the alternate, all requirements applicable thereof are deleted from the contract documents.

ALTERNATES			
ALTERNATE NO.	ALTERNATE DESCRIPTION	VALUE	STATUS
A-1	Two Bi-Fold Doors		Pending

—OTHER SCHEDULE SUMMARY INFORMATION—

The Substantial Completion date for the **Overhead Sectional & Electric Four Fold Doors** Subcontractor is as reflected within the Construction Schedule. Special attention should be directed to the Construction Schedule for project sequencing requirements which are a requirement of this Scope of Work.

END OF SECTION
TRADE PACKAGE SCOPE OF WORK:
08D OVERHEAD SECTIONAL DOORS SUBCONTRACT

TRADE PACKAGE SCOPE OF WORK

09A METAL STUD FRAMING, INSULATION, AND DRYWALL SUBCONTRACT

Furnish all labor, materials, tools, taxes, safety, insurances, equipment, hoisting, cranes, supervision, and all other incidentals necessary to accomplish all **Metal Stud Framing, Insulation, and Drywall** Work in accordance with all Contract Documents and as defined within **Trade Package General Scope Requirements** and this Scope of Work.

Subcontractors/Suppliers performing work on multiple portions of the project site (i.e., buildings, parking area, site, etc.) shall provide separate equipment, hoisting, cranes, supervision including, but not limited to management, superintendent, foreman, tradesman, laborers, etc. for each portion unless agreed to otherwise in writing by the General Contractor. If the project needs and schedule are not being met to the satisfaction of the General Contractor, written approval will be rescinded, and the original staffing requirements shall be provided by the Subcontractor.

Project Specifications for the **Metal Stud Framing, Insulation, and Drywall** Scope of Work are listed below. This Subcontractor or Supplier shall carefully examine all specification sections and drawings within the Contract Documents and be responsible for all work described within this Scope of Work and as required on the project.

PROJECT SPECIFICATIONS

This Subcontractor is responsible for all Division 01 - General Requirements as prepared by the Architect, Design Consultants, and/or General Contractor or as designated elsewhere within the Technical Specifications or Drawings as applicable to this Trade Package Scope of Work.

DIVISION 01 – GENERAL REQUIRMENTS	
GC Req.	General Requirements Manual
GC Req.	Trade Package Scope Manual
GC Req.	Trae Package General Scope Requirements
Division 01	All Division 01 Specification as Required by Samet Corporation

Primary Responsibility

This Subcontractor is responsible for all Primary Specification Responsibilities listed below unless this Scope of Work specifically states otherwise.

PRIMARY TECHNICAL SPECIFICATION RESPONSIBILITIES (PROJECT MANUAL)	
	Specifications and notes included on the Drawings.
05-40-00	Cold -Formed Metal Framing
054400	Cold Formed Metal Trusses
~~06 16 00~~	~~Sheathing~~
07-21-00	Thermal Insulation
~~07 21 09~~	~~Thermal Insulation – Spray Poly~~
~~07 84 13~~	~~Penetration Firestopping (As it pertains to Scope Items 7.0.4 & 7.0.5)~~

09-22-16	Non-Structural Metal Framing
09-29-00	Gypsum Board

Secondary Responsibility

This Subcontractor is responsible for all Secondary Specification Responsibilities listed below to the extent applicable, or defined, within this Scope of Work.

SECONDARY TECHNICAL SPECIFICATION RESPONSIBILITIES	
Gen. Note	**This Subcontractor is responsible for complete Specifications package as it relates to the Metal Stud Framing, Insulation, Drywall scope of work.**
Division 03	Concrete
Division 04	Masonry
Division 05	Metals
Division 06	Wood, Plastics, and Composites
Division 07	Thermal ~~and~~ Moistures ~~Protection~~
Division 08	Openings
Division 09	Finishes
Division 10	Specialties
Division 21	Fire Suppression
Division 22	Plumbing
Division 23	~~Heating, Ventilating, and Air Conditioning (HVAC)~~ Mechanical
Division 26	Electrical
Division 27	Communications
Division 28	Electronic Safety and Security

The **Metal Stud Framing, Insulation, and Drywall** Subcontractor shall be responsible for complying with the requirements of each Scope of Work Description / Clarification Section listed above, **even if** those requirements are not shown within the Specification Sections listed above.

This Subcontractor shall be responsible for all Primary Specification Responsibilities identified above in their entirety. All costs associated with Primary Specification Responsibilities shall be included in this Subcontractor's Scope of Work and reflected in bid amount.

This Subcontractor shall be at least partially responsible for Secondary Specification Responsibilities identified above. The Secondary Specifications identify work scopes for which this Subcontractor is not wholly responsible but shall be applicable as it relates to the execution of Primary Specification Responsibilities. This may include a varying degree of responsibility from simple coordination to performing entire portions of work. The Secondary Specifications are not intended to be all inclusive and shall not limit the Subcontractor in any way with regards to installation of work identified in Primary Specification Responsibilities.

The **Metal Stud Framing, Insulation, and Drywall** Subcontractor is responsible for all Work described herein and below unless specifically noted otherwise to be part of another Subcontractor's Scope of Work.

Prior to commencing with the installation of any work, this Subcontractor shall field verify and provide the Construction Manager with written confirmation that all areas scheduled to receive the materials provided as part of this Scope of Work are in a condition acceptable to this Subcontractor. Failure to notify the Construction Manager in writing of such acceptance prior to commencing any work shall constitute this Subcontractor's acceptance of the applicable areas.

The drawings, details and specifications do not necessarily indicate or describe all work required for the full performance and completion of the requirements of the Contract Documents. This Subcontractor shall use all reasonable care to include those items necessary and/or implied to fill foreseeable gaps, omissions or conflicts that prevent a complete and functioning system even though it may not be detailed.

Provide all shop drawings, stamped drawings, calculations, submittals, samples, mock-ups, certificates, qualifications, etc. as required for approval by Architect/Engineer, and/or local governing authorities in a timely manner to avoid delaying the project.

See below for all safety submittals required throughout the duration of the project:

5.0 METALS SCOPE OF WORK DESCRIPTION

5.0.1 The scope of this subcontract shall be in accordance with ADA and Fair Housing requirements, as well as in accordance with local authority having jurisdiction. Failure to comply with the ADA and Fair Housing regulations will require correction of work-in-place solely at the Subcontractor's expense. This Subcontractor shall reasonably notify the Contractor of any potential problems prior to the installation of its scope of work.

5.0.2 Cold Formed Metal Framing and Trusses – This Work shall include providing and installing a complete Cold Formed Metal Framing and Truss System, including but not limited to, all engineered shop drawings, light gauge structural steel studs and trusses with design load and structural analysis data signed and sealed by a qualified professional engineer responsible for preparing the structural analysis, non-load bearing steel stud framing, light and heavy gauge steel studs, steel track, single deflection steel track, metal stud x bracing, metal rafters, bridging, blocking, soffit framing, etc., framing accessories, anchor bolts, expansion anchors, power actuated anchors, mechanical fasteners, clips, galvanizing touch up paint where required, light gauge steel hat and/or furred channels, cold rolled steel channels, miscellaneous light gauge steel components, closure angle at doors and windows, box headers, etc. to complete all cold formed metal framing work, per delegated design.

5.0.3 Subcontractor shall be responsible for stud size, spacing, orientation, etc., per the contract documents, associated UL assemblies, and delegated design.

5.0.4 Subcontractor shall be responsible for furnish and install sealer gaskets in standard widths to match width of bottom track or rim track members, per the contract documents and associated UL assemblies.

5.0.5 Subcontractor shall be responsible for the framing of all soffits, bulkheads, etc. per the contract documents. Subcontractor shall be responsible for parapet metal framing in between integral truss

verticals, per the contract documents.

5.0.6 Subcontractor shall be responsible for furnish and install of parapet infill framing between trusses with the top track, per the contract documents. ~~Metal truss supplier shall provide trusses with integral parapet vertical extension to be installed by others.~~

5.0.7 Subcontractor shall be responsible for furnish and install of flat roof to pitched roof wall infill framing between trusses, per the contract documents. ~~Metal truss supplier shall provide trusses with integral vertical extension to be installed by others.~~

~~5.0.8 Subcontractor shall furnish and install metal rafter framing at the Tower area, per the contract documents.~~

~~5.0.9 Design shall include notching of studs to by-pass the building structure, support tubing, mechanical, plumbing, sprinkler, or electrical, as required. Structural integrity must be maintained by notching or other means of bracing support around obstacles, per the contract documents.~~

~~5.0.10~~5.0.8 Subcontractor has included the turnkey furnish and install of X-Bracing with associated end posts, gussets, hold down anchors, flat straps, bridging, fasteners, etc. per the delegated design and contract documents.

~~5.0.11~~5.0.9 Subcontractor shall be responsible for all attachments of this scope of work not furnished or installed by others, including fasteners, hardware, mastic, etc., to slab-on-grade, decking, structural steel, CMU walls, etc. per the contract documents.

~~5.0.12~~5.0.10 Subcontractor shall coordinate stud locations with layout required for integration and attachment of work by others that will attach to stud framing, per the contract documents.

~~5.0.13~~5.0.11 Subcontractor shall be responsible for the installation of all lintels mechanically fastened to metal framing, per the contract documents. Lintels to be provided by others. Subcontractor has included fasteners, per the contract documents. Subcontractor shall coordinate install with the Masonry Subcontractor. Masonry lintels at the tower confirmed to be loose or welded to structural steel.

~~5.0.14 Subcontractor shall provide all notching of studs to by-pass the building structure, mechanical, plumbing, sprinkler, or electrical, as required.~~

~~5.0.15~~5.0.12 Subcontractor shall be responsible for delegated design associated with this scope of work, per the contract documents.

~~5.0.16~~5.0.13 Provide all light gauge metal framing and truss structural calculations within four (4) weeks of executed subcontract and receipt of necessary CAD files and design documents.

~~5.0.17 Cold-Formed Metal Trusses to be furnished and installed by others.~~

6.0 WOOD, PLASTICS, AND COMPOSITES SCOPE OF WORK DESCRIPTION

6.0.1 Rough Carpentry – This Work shall include providing rough carpentry and sheathing as outlined herein, including but not limited to, plywood sheathing, in-wall wood blocking for casework/millwork, toilet partitions/accessories, lockers, bunk cubbies, television brackets, projector brackets, lockers, range hood, miscellaneous blocking, etc. per the contract documents. A light gage metal blocking system may be used in certain applications if approved by the Designer. All rough carpentry work necessary to install the roofing systems shall be furnished and installed by others. Subcontractor to provide metal stud framed openings in lieu of additional wood blocking. Shims by Storefront Subcontractor.

6.0.2 Sheathing - This Work shall include providing all sheathing, including but not limited to, gypsum sheathing, glass matt sheathing, fire rated ~~pressure treated~~ plywood, ~~,~~ etc. if required, fasteners, sheathing tape, sealant, etc. as required to provide a complete sheathing system, per the contract documents.

7.0 THERMAL AND MOISTURE PROTECTION SCOPE OF WORK DESCRIPTION

7.0.1 Insulation - This Work shall include providing a complete Insulation System for all buildings, including but not limited to, fiber batt insulation at metal stud framing both faced/unfaced insulation to meet code, all drywall/metal stud partition and ceiling insulation (sound attenuation blankets), where indicated, miscellaneous light gauge metal framing insulation, miscellaneous unfaced filler insulation, interior/exterior rigid insulation as it may apply to this Scope of Work, where specified, seam tape, wire, ties, fire rated insulation, where required, insulation fasteners, z-girts / clips, clips and anchorage devices, mineral wool blanket insulation, insulation at top of wall conditions as required, etc. to complete all insulation system work as designated within the Contract Documents. Cavity wall rigid insulation at CMU-brick veneer and metal stud –brick veneer walls shall be by the Masonry Subcontractor. This Subcontractor is not responsible for closed cell spray foam insulation.

7.0.2 Subcontractor shall be responsible for furnish and install of rigid insulation with associated hardware at all locations, per the contract documents, except for the portion exterior walls shown to receive brick. Subcontractor shall coordinate the install of flashing by others with the installation of rigid insulation, per this scope of work. The Masonry Subcontractor shall install rigid insulation at the exterior side of walls scheduled to receive brick.

7.0.3 Sound Batt Insulation – This Subcontractor shall provide and install all sound batt insulation as shown or required by the contract documents.

7.0.4 Fire Resistive Joint Sealants – This Work shall include providing the specified fire stopping sealing system atop all fire rated walls drywall assemblies to the underside of the metal deck as designated on the drawings and as required to meet the specified fire rating, per the contract documents. Provide fire resistive joint sealants at rated walls as designated by the contract documents and as required to meet the specified fire rating.

7.0.5 Subcontractor shall coordinate with MEP trades and General Contractor to ensure a single-source

manufactured product is used for firestopping activities. To be coordinated via the submittal process.

8.0 OPENINGS SCOPE OF WORK DESCRIPTION

8.0.1 Hollow Metal Frame Installation – This Work shall include **installing** all hollow metal frames furnished by the Hollow Metal Frame, Door, and Hardware Subcontractor which are scheduled or designated within a drywall/metal stud wall assembly, including but not limited to, installing door frames, jamb anchors, floor to frame anchors, etc. to specification requirements and tolerances designated within ~~the provisions of Steel Door Institute 105 and~~ the contract documents. Provide all necessary temporary bracing, spreaders, turnbuckles, wood blocking, miscellaneous hardware, anchors, and accessories required to properly perform the hollow metal frame installation work. Upon delivery this Subcontractor will be responsible for unloading, staging, and installing all hollow metal frames scheduled within a drywall/metal stud wall assembly. Subcontractor shall provide a designated onsite representative to verify materials being furnished by the Hollow Metal Door, Frame, and Hardware Subcontractor are complete and in accordance with the Contract Documents. Upon completing the on-site verifications, this Subcontractor shall sign-off on delivery tickets and at that time will take responsibility for securing and protecting the applicable hollow metal frame material furnished by others.

8.0.2 Access Doors – This Work shall include the installation of all access doors within a metal stud, or drywall assembly as required by the Plumbing, Fire Protection, HVAC, and Electrical Subcontractors. The Access Doors shall be furnished by the respective Subcontractor requiring this door for installation as part of this Scope of Work. In addition to access panels required for Fire Protection and MEP Subcontractors, this Subcontractor should assume installing at least one (1) access panel in each designated hard ceiling area with an additional panel to be installed in areas exceeding more than twenty (20) linear feet in any direction.

9.0 FINISHES SCOPE OF WORK DESCRIPTION

9.0.1 Drywall Construction - This Work shall include providing a complete Gypsum Drywall and Metal Framing System including but not limited to, submittals, scaffolds, material lifts, all light and heavy gauge steel studs, metal stud x bracing, light gauge steel hat and/or furred channels, cold-formed steel channels, miscellaneous light gauge steel components, kickers, supports, track, power actuated anchors, mechanical fasteners, clips, gypsum ceiling clips, galvanizing touch up paint, where required, gypsum board, gypsum board sheathing, moisture resistant sheet rock, cement board, exterior gypsum board sheathing, gypsum joint taping and finishing, gypsum board, tile backer board at wall tile locations, water resistant gypsum backing board, mold resistant gypsum board when complete scheduled dry in is after this work commences, acoustical sealants, angles, clips, hangers, trim, miscellaneous accessories, joint compound, gypsum ceiling metal control joints, wire, ties, corner beads, zip beads, spot grout, where required, fasteners, felt, sealant, and all other materials required to complete all fire rated and non-fire rated gypsum ceilings, walls, and associated light gauge metal framing work, including drywall/metal stud partitions, drywall/metal stud soffits, special drywall/metal stud bulkheads and ceiling systems, etc. as designated within the

Contract Documents and delegated design.

~~9.0.2 Acoustical Panel Ceilings – This Work shall include a complete Acoustical Panel Ceiling System, including but not limited to, acoustical tile, pre-painted metal suspension systems, acoustical sealants, hold down clips, impact clips, where required, impact gypsum board lay-in ceiling system, drywall clips where required, fasteners, ceiling expansion joint covers where required, accessories, cleaning and protection and miscellaneous materials as designated within the contract documents. Additionally, install all hangers, supports, etc. to meet seismic requirements, where required by the technical specifications and/or governing code for all acoustical panel ceiling systems, including but shall not be limited to, all light fixtures, HVAC grilles, tile mounted speakers, and any other grid and/or tile mounted equipment and/or accessories, per the contract documents. Also, provide all cut outs required for fire protection sprinkler heads, tile mounted speakers and any other device or equipment piece penetrating an acoustical tiled ceiling system.~~

~~9.0.3~~9.0.2 Subcontractor shall furnish and install all metal furring and furred drywall at CMU walls, per the contract documents.

~~9.0.4~~9.0.3 Subcontractor shall provide rough openings, if required, within an applicable new drywall / metal stud wall / soffit condition to receive work of other trade subcontractors, per the contract documents and coordination with associated subcontractor(s). Subsequent trades to layout required rough openings once this Subcontractor has completed wall layout.

~~9.0.5~~9.0.4 Subcontractor shall be responsible for providing the fire wall stenciling of all fire rated or smoke rated drywall walls, etc. as required by the Contract Documents or Authority Having Jurisdiction.

~~9.0.6~~9.0.5 Subcontractor shall provide the specified gypsum board finish levels at specified locations, per the contract documents.

~~9.0.7~~9.0.6 Subcontractor shall pay particular attention and account for those finishes, equipment, and areas sensitive to airborne dust caused by repairs to finished building areas.

~~9.0.8~~9.0.7 Construct all partitions and ceilings within the tolerances specified, per the Contract Documents. Subcontractor shall be responsible for all remedial work associated with work out of tolerances including, but not limited to, caulking, shimming, filling, skimming, or replacement of work provided as part of this Subcontract or work provided by others as it pertains to this scope of work.

~~9.0.9~~9.0.8 Provide necessary task lighting required for complete installation of this Scope of Work. It is understood that the temporary lighting provided by the Electrical Subcontractor shall not be relied upon for execution of this Subcontractor's scope of work. Final and punch drywall point-up to be completed under permanent lighting.

~~9.0.10~~9.0.9 Subcontractor shall properly stack and store all materials to prevent sagging, damage, and water damage. Subcontractor shall be aware of floor system capacities and shall not overload the

capacities of the structural design. Subcontractor shall coordinate location of all material deliveries with the General Contractor's Project Superintendent.

~~9.0.11~~9.0.10 Provide proper ventilation during and following joint treatment applications as it pertains to this scope of work.

~~9.0.12~~9.0.11 Engineering and layout from control lines shall be by this Subcontractor as it pertains to this scope of work.

~~9.0.13~~9.0.12 Subcontractor shall provide all trapezes, hangers, seismic support if required, and additional framing necessary to support this scope of work.

~~9.0.14~~9.0.13 Subcontractor has included control joints in the drywall, per the contract documents and manufacturer's specifications.

~~9.0.15~~9.0.14 This Subcontractor shall provide all reveals, accessories, trim, and miscellaneous components within the components in this scope and those required to make a smooth transition to adjoining dissimilar materials by others.

~~9.0.16~~9.0.15 This Subcontractor shall provide protection of adjacent surfaces and clean up and dispose of materials (trash, bags, etc.) in area designated by the General Contractor on-site. This shall include furnishing, installation, and removal of poly as required as it pertains to this scope of work.

~~9.0.17~~9.0.16 This Subcontractor shall utilize the latest edition of the U.S. Gypsum Company handbook for installation of gypsum board materials, except where it is found to conflict with the Contract Documents or any governing inspection agency. In this case, the Subcontractor will advise the General Contractor to obtain a ruling from the Architect on the method of construction to be used.

~~9.0.18~~9.0.17 This Subcontractor shall check for compliance (plumb, square, proper alignment, etc.) at each stage of completion (framing, hanging, finishing). Any work that is not within specified tolerances 1/8" in 10' shall be removed and replaced. All interior and exterior studs to be secured to floor and ceiling runners, both sides and top and bottom, prior to drywall installation unless specified otherwise. Under no circumstances are studs to be left loose prior to hanging drywall.

~~9.0.19~~9.0.18 This Subcontractor shall assist the General Contractor in verifying code space requirements prior to framing walls (i.e. 5'-0" turnarounds, 8'-0" corridors, 12"/18" Push/Pull at doors, etc.) Sweep all tracks and shafts clean prior to hanging board. The General Contractor shall sign-off on completion of in-wall prior to any wall being two-sided with drywall.

~~9.0.20~~9.0.19 This Subcontractor shall utilize edge zip bead at all aluminum windows, storefronts, and underside of hard surface sills unless indicated otherwise in the Contract Documents.

~~9.0.21~~9.0.20 This Subcontractor shall coordinate all appropriate means for the attachment and/or installation of louvers, linear diffusers, and items of similar distinction at all locations, per the contract documents.

9.0.229.0.21 This Subcontractor shall ensure all damper openings are framed and hung in strict accordance with direction given by General Contractor and associated subcontractors. Subcontractor shall coordinate with the Mechanical Subcontractor as required.

9.0.239.0.22 This Subcontractor shall provide all fire rated construction as specified and/or required by the Contract Documents as it pertains to this scope of work, to comply with all prevailing codes, standards, and regulatory agencies. This includes cutting the drywall at the top of any rated and/or smoke wall to the flutes of the decking and/or "dimpling" the drywall into the fireproofing.

9.0.249.0.23 This Subcontractor shall provide holes, cutouts, framing, prep work, etc. as required for any penetrations that require framing for installation of others work (i.e., electrical work, mechanical work, miscellaneous specialties, equipment, etc.) to the extent this Subcontractor has not completed their rated assembly work prior to communication or work by others. Cut drywall neatly to fit around all boxes or penetrations. This Subcontractor shall be responsible for maintaining all U.L. ratings, STC ratings, sound seals, etc. Sealing around penetrations necessary to maintain the integrity of smoke, sound, and fire-rated is by this Subcontractor provided additional penetrations are not made by the subsequent Subcontractor.

~~9.0.25 Subcontractor shall photo document and clearly communicate drywall patches for reimbursement via Commitment Change Order.~~

9.0.269.0.24 Subcontractor shall provide a minimum of one (1) drywall finisher for all turnover walks performed by the Architect, Owner, and/or Owner Representative(s).

—OTHER SCHEDULE SUMMARY INFORMATION—

The Substantial Completion date for the **Metal Stud Framing, Insulation, Drywall, and Suspended Ceilings** Subcontractor is as reflected within the Construction Schedule. Special attention should be directed to the Construction Schedule for project sequencing requirements which are a requirement of this Scope of Work.

END OF SECTION
TRADE PACKAGE SCOPE OF WORK:
09J METAL STUD FRAMING, INSULATION, DRYWALL, AND SUSPENDED CEILINGS SUBCONTRACT

TRADE PACKAGE SCOPE OF WORK

09B ACOUSTICAL & SUSPENDED CLOUD CEILINGS SUBCONTRACT

Furnish all labor, materials, tools, taxes, safety, insurances, equipment, hoisting, cranes, supervision, and all other incidentals necessary to accomplish all **Acoustical & Suspended Cloud Ceilings** Work in accordance with all Contract Documents and as defined within **Trade Package General Scope Requirements** and this Scope of Work.

Subcontractors/Suppliers performing work on multiple portions of the project site (i.e., buildings, parking area, site, etc.) shall provide separate equipment, hoisting, cranes, supervision including, but not limited to management, superintendent, foreman, tradesman, laborers, etc. for each portion unless agreed to otherwise in writing by the General Contractor. If the project needs and schedule are not being met to the satisfaction of the General Contractor, written approval will be rescinded, and the original staffing requirements shall be provided by the Subcontractor.

Project Specifications for the **Acoustical and Suspended Cloud Ceilings** Scope of Work are listed below. This Subcontractor or Supplier shall carefully examine all specification sections and drawings within the Contract Documents and be responsible for all work described within this Scope of Work and as required on the project.

PROJECT SPECIFICATIONS

This Subcontractor is responsible for all Division 01 - General Requirements as listed below prepared by the Architect, Design Consultants, and/or General Contractor or as designated elsewhere within the Technical Specifications or Drawings as applicable to this Trade Package Scope of Work.

DIVISION 01 – GENERAL REQUIRMENTS	
GC Req.	General Requirements Manual
GC Req.	Trade Package Scope Manual
GC Req.	Trae Package General Scope Requirements
Division 01	All Division 01 Specification as Required by Samet Corporation

Primary Responsibility
This Subcontractor is responsible for all Primary Specification Responsibilities listed below unless this Scope of Work specifically states otherwise.

PRIMARY TECHNICAL SPECIFICATION RESPONSIBILITIES (PROJECT MANUAL)	
	Specifications and notes included on the Drawings.
09511409 ~~51 13~~	Acoustical Panel Ceilings
095416	Suspended Cloud Ceilings

Secondary Responsibility

This Subcontractor is responsible for all Secondary Specification Responsibilities listed below to the extent applicable, or defined, within this Scope of Work.

SECONDARY TECHNICAL SPECIFICATION RESPONSIBILITIES	
Gen. Note	**This Subcontractor is responsible for complete Specifications package as it relates to the Acoustical Ceiling scope of work.**
Division 03	Concrete
Division 04	Masonry
Division 05	Metals
Division 06	Wood, Plastics, and Composites
Division 08	Openings
Division 09	Finishes
Division 10	Specialties
Division 21	Fire Suppression
Division 22	Plumbing
Division 23	~~Heating, Ventilating, and Air Conditioning (HVAC)~~ Mechanical
Division 26	Electrical
Division 27	Communications
Division 28	Electronic Safety and Security

The **Acoustical & Suspended Cloud Ceilings** Subcontractor shall be responsible for complying with the requirements of each Scope of Work Description / Clarification Section listed above, **even if** those requirements are not shown within the Specification Sections listed above.

This Subcontractor shall be responsible for all Primary Specification Responsibilities identified above in their entirety. All costs associated with Primary Specification Responsibilities shall be included in this Subcontractor's Scope of Work and reflected in bid amount.

This Subcontractor shall be at least partially responsible for Secondary Specification Responsibilities identified above. The Secondary Specifications identify work scopes for which this Subcontractor is not wholly responsible but shall be applicable as it relates to the execution of Primary Specification Responsibilities. This may include a varying degree of responsibility from simple coordination to performing entire portions of work. The Secondary Specifications are not intended to be all inclusive and shall not limit the Subcontractor in any way with regards to installation of work identified in Primary Specification Responsibilities.

The **Acoustical & Suspended Cloud Ceilings** Subcontractor is responsible for all Work described herein and below unless specifically noted otherwise to be part of another Subcontractor's Scope of Work.

Prior to commencing with the installation of any work, this Subcontractor shall field verify and provide the Construction Manager with written confirmation that all areas scheduled to receive the materials provided as part of this Scope of Work are in a condition acceptable to this Subcontractor. Failure to notify the

Construction Manager in writing of such acceptance prior to commencing any work shall constitute this Subcontractor's acceptance of the applicable areas.

The drawings, details and specifications do not necessarily indicate or describe all work required for the full performance and completion of the requirements of the Contract Documents. This Subcontractor shall use all reasonable care to include those items necessary and/or implied to fill foreseeable gaps, omissions or conflicts that prevent a complete and functioning system even though it may not be detailed.

Provide all shop drawings, stamped drawings, calculations, submittals, samples, mock-ups, certificates, qualifications, etc. as required for approval by Architect/Engineer, and/or local governing authorities in a timely manner to avoid delaying the project.

9.0 FINISHES SCOPE OF WORK DESCRIPTION

~~9.0.1 Drywall Construction - This Work shall include providing a complete Gypsum Drywall and Metal Framing System including but not limited to, submittals, scaffolds, material lifts, all light and heavy gauge steel studs, metal stud x bracing, light gauge steel hat and/or furred channels, cold-formed steel channels, miscellaneous light gauge steel components, kickers, supports, track, power actuated anchors, mechanical fasteners, clips, gypsum ceiling clips, galvanizing touch up paint, where required, gypsum board, gypsum board sheathing, moisture resistant sheet rock, cement board, exterior gypsum board sheathing, gypsum joint taping and finishing, gypsum board, tile backer board at wall tile locations, water resistant gypsum backing board, mold resistant gypsum board when complete scheduled dry in is after this work commences, acoustical sealants, angles, clips, hangers, trim, miscellaneous accessories, joint compound, gypsum ceiling metal control joints, wire, ties, corner beads, zip beads, spot grout, where required, fasteners, felt, sealant, and all other materials required to complete all fire rated and non-fire rated gypsum ceilings, walls, and associated light gauge metal framing work, including drywall/metal stud partitions, drywall/metal stud soffits, special drywall/metal stud bulkheads and ceiling systems, etc. as designated within the Contract Documents and delegated design.~~

9.0.1 Acoustical Panel Ceilings – This Work shall include a complete Acoustical Panel Ceiling System, including but not limited to, acoustical tile, pre-painted metal suspension systems, acoustical sealants, hold down clips, impact clips, where required, impact gypsum board lay-in ceiling system, drywall clips where required, fasteners, ceiling expansion joint covers where required, accessories, cleaning and protection and miscellaneous materials as designated within the contract documents. Additionally, install all hangers, supports, etc. to meet seismic requirements, where required by the technical specifications and/or governing code for all acoustical panel ceiling systems, including but shall not be limited to, all light fixtures, HVAC grilles, tile mounted speakers, and any other grid and/or tile mounted equipment and/or accessories, per the contract documents. Also, provide all cut outs required for fire protection sprinkler heads, tile mounted speakers and any other device or equipment piece penetrating an acoustical tiled ceiling system.

9.0.2 Suspended Cloud Ceilings - Work shall include a complete Acoustical Panel Ceiling System, including but not limited to, acoustical tile, pre-painted metal suspension systems, acoustical sealants, hold down clips, impact clips, where required, impact gypsum board lay-in ceiling system, drywall clips

where required, fasteners, ceiling expansion joint covers where required, accessories, cleaning and protection and miscellaneous materials as designated within the contract documents. Additionally, install all hangers, supports, etc. to meet seismic requirements, where required by the technical specifications and/or governing code for all acoustical panel ceiling systems, including but shall not be limited to, all light fixtures, HVAC grilles, tile mounted speakers, and any other grid and/or tile mounted equipment and/or accessories, per the contract documents. Also, provide all cut outs required for fire protection sprinkler heads, tile mounted speakers and any other device or equipment piece penetrating an acoustical tiled ceiling system.

~~9.0.2~~9.0.3

~~9.0.3 Subcontractor shall furnish and install all metal furring and furred drywall at CMU walls, per the contract documents.~~

~~9.0.4 Subcontractor shall provide rough openings, if required, within an applicable new drywall / metal stud wall / soffit condition to receive work of other trade subcontractors, per the contract documents and coordination with associated subcontractor(s). Subsequent trades to layout required rough openings once this Subcontractor has completed wall layout.~~

~~9.0.5 Subcontractor shall be responsible for providing the fire wall stenciling of all fire rated or smoke rated drywall walls, etc. as required by the Contract Documents or Authority Having Jurisdiction.~~

~~9.0.6 Subcontractor shall provide the specified gypsum board finish levels at specified locations, per the contract documents.~~

~~9.0.7 Subcontractor shall pay particular attention and account for those finishes, equipment, and areas sensitive to airborne dust caused by repairs to finished building areas.~~

~~9.0.8 Construct all partitions and ceilings within the tolerances specified, per the Contract Documents. Subcontractor shall be responsible for all remedial work associated with work out of tolerances including, but not limited to, caulking, shimming, filling, skimming, or replacement of work provided as part of this Subcontract or work provided by others as it pertains to this scope of work.~~

~~9.0.9~~9.0.4 Provide necessary task lighting required for complete installation of this Scope of Work. It is understood that the temporary lighting provided by the Electrical Subcontractor shall not be relied upon for execution of this Subcontractor's scope of work. Final and punch drywall point-up to be completed under permanent lighting.

~~9.0.10~~9.0.5 Subcontractor shall properly stack and store all materials to prevent sagging, damage, and water damage. Subcontractor shall be aware of floor system capacities and shall not overload the capacities of the structural design. Subcontractor shall coordinate location of all material deliveries with the General Contractor's Project Superintendent.

~~9.0.11 Provide proper ventilation during and following joint treatment applications as it pertains to this scope of work.~~

~~9.0.12 Engineering and layout from control lines shall be by this Subcontractor as it pertains to this scope of work.~~

~~9.0.13 Subcontractor shall provide all trapezes, hangers, seismic support if required, and additional framing necessary to support this scope of work.~~

~~9.0.14 Subcontractor has included control joints in the drywall, per the contract documents and manufacturer's specifications.~~

~~9.0.15 This Subcontractor shall provide all reveals, accessories, trim, and miscellaneous components within the components in this scope and those required to make a smooth transition to adjoining dissimilar materials by others.~~

~~9.0.16 This Subcontractor shall provide protection of adjacent surfaces and clean up and dispose of materials (trash, bags, etc.) in area designated by the General Contractor on-site. This shall include furnishing, installation, and removal of poly as required as it pertains to this scope of work.~~

~~9.0.17 This Subcontractor shall utilize the latest edition of the U.S. Gypsum Company handbook for installation of gypsum board materials, except where it is found to conflict with the Contract Documents or any governing inspection agency. In this case, the Subcontractor will advise the General Contractor to obtain a ruling from the Architect on the method of construction to be used.~~

~~9.0.18 This Subcontractor shall check for compliance (plumb, square, proper alignment, etc.) at each stage of completion (framing, hanging, finishing). Any work that is not within specified tolerances 1/8" in 10' shall be removed and replaced. All interior and exterior studs to be secured to floor and ceiling runners, both sides and top and bottom, prior to drywall installation unless specified otherwise. Under no circumstances are studs to be left loose prior to hanging drywall.~~

~~9.0.19 This Subcontractor shall assist the General Contractor in verifying code space requirements prior to framing walls (i.e. 5'-0" turnarounds, 8'-0" corridors, 12"/18" Push/Pull at doors, etc.) Sweep all tracks and shafts clean prior to hanging board. The General Contractor shall sign-off on completion of in-wall prior to any wall being two-sided with drywall.~~

~~9.0.20 This Subcontractor shall utilize edge zip bead at all aluminum windows, storefronts, and underside of hard surface sills unless indicated otherwise in the Contract Documents.~~

~~9.0.21 This Subcontractor shall coordinate all appropriate means for the attachment and/or installation of louvers, linear diffusers, and items of similar distinction at all locations, per the contract documents.~~

~~9.0.22 This Subcontractor shall ensure all damper openings are framed and hung in strict accordance with direction given by General Contractor and associated subcontractors. Subcontractor shall coordinate with the Mechanical Subcontractor as required.~~

~~9.0.23 This Subcontractor shall provide all fire rated construction as specified and/or required by the Contract Documents as it pertains to this scope of work, to comply with all prevailing codes,~~

~~standards, and regulatory agencies. This includes cutting the drywall at the top of any rated and/or smoke wall to the flutes of the decking and/or "dimpling" the drywall into the fireproofing.~~

9.0.6

~~9.0.24~~9.0.7 This Subcontractor shall provide holes, cutouts, framing, prep work, etc. as required for any penetrations that require framing for installation of others work (i.e., electrical work, mechanical work, miscellaneous specialties, equipment, etc.) to the extent this Subcontractor has not completed their rated assembly work prior to communication or work by others. Cut drywall neatly to fit around all boxes or penetrations. This Subcontractor shall be responsible for maintaining all U.L. ratings, STC ratings, sound seals, etc. Sealing around penetrations necessary to maintain the integrity of smoke, sound, and fire-rated is by this Subcontractor provided additional penetrations are not made by the subsequent Subcontractor.

~~9.0.25 Subcontractor shall photo document and clearly communicate drywall patches for reimbursement via Commitment Change Order.~~

~~9.0.26 Subcontractor shall provide a minimum of one (1) drywall finisher for all turnover walks performed by the Architect, Owner, and/or Owner Representative(s).~~

~~9.0.27 Subcontractor has included four (4) punches/point-ups of the drywall including: first after first coat paint, second after lights are on, third after General Contractor's punch list, and fourth for Owner's punch list, totaling four (4) punches, provided each punch/point-up is thoroughly executed, per the contract documents.~~

END OF SECTION
TRADE PACKAGE SCOPE OF WORK:
09B ACOUSTICAL & SUSPENDED CLOUD CEILINGS SUBCONTRACT ~~ACOUSTICAL CEILINGS SUBCONTRACT~~

TRADE PACKAGE SCOPE OF WORK

09C – RESILIENT FLOORING, ATHLETIC FLOORING ~~CARPET~~, BASE SUBCONTRACT

Furnish all labor, materials, tools, taxes, safety, insurances, equipment, hoisting, cranes, supervision, and all other incidentals necessary to accomplish all **Resilient Flooring, Athletic Flooring, Base, and Accessories** Subcontract Work in accordance with all Contract Documents and as defined within **Trade Package General Scope Requirements** and this Scope of Work.

Subcontractors/Suppliers performing work on multiple portions of the project site (i.e., buildings, parking area, site, etc.) shall provide separate equipment, hoisting, cranes, full-time English-speaking supervision including, but not limited to management, superintendent, on site foreman, tradesman, laborers, etc. for each portion unless agreed to otherwise in writing by the General Contractor. If the project needs and schedule are not being met to the satisfaction of the General Contractor, written approval will be rescinded, and the original staffing requirements shall be provided by the Subcontractor.

Project Specifications for the **Resilient Flooring, Athletic Flooring, Base, and Accessories** Scope of Work are listed below. This Subcontractor or Supplier shall carefully examine all specification sections and drawings within the Contract Documents and be responsible for all work described within this Scope of Work and as required on the project.

PROJECT SPECIFICATIONS

This Subcontractor is responsible for all Division 01 - General Requirements as listed below prepared by the Architect, Design Consultants, and/or General Contractor or as designated elsewhere within the Technical Specifications or Drawings as applicable to this Trade Package Scope of Work.

DIVISION 01 – GENERAL REQUIRMENTS	
GC Req.	General Requirements Manual
GC Req.	Trade Package Scope Manual
GC Req.	Trae Package General Scope Requirements
Division 01	All Division 01 Specification as Required by Samet Corporation

Primary Responsibility

This Subcontractor is responsible for all Primary Specification Responsibilities listed below unless this Scope of Work specifically states otherwise.

PRIMARY TECHNICAL SPECIFICATION RESPONSIBILITIES (PROJECT MANUAL)	
	Specifications are included on the Drawings
09-65-13	Resilient Base and Accessories
09-65-19	Resilient Tile Flooring
09-65-66	Resilient Athletic Flooring

Secondary Responsibility

This Subcontractor is responsible for all Secondary Specification Responsibilities listed below to the extent applicable, or defined, within this Scope of Work.

SECONDARY TECHNICAL SPECIFICATION RESPONSIBILITIES	
	Specifications are included on the Drawings
Gen. Note	**This Subcontractor is responsible for complete Specifications package as it relates to the Resilient Flooring, Base, and Accessories Scope of Work.**
Division 03	Concrete
Division 06	Wood, Plastics, and Composites
Division 08	Openings
Division 09	Finishes
Division 12	Furnishings
Division 22	Plumbing
Division 26	Electrical

The **Resilient Flooring, Athletic Flooring, Base, and Accessories** Subcontractor shall be responsible for complying with the requirements of each Scope of Work Description / Clarification Section listed below, **even if** those requirements are not shown within the Specification Sections listed above.

This Subcontractor shall be responsible for all Primary Specification Responsibilities identified above in their entirety. All costs associated with Primary Specification Responsibilities shall be included in this Subcontractor's Scope of Work and reflected in bid amount.

This Subcontractor shall be at least partially responsible for Secondary Specification Responsibilities identified above. The Secondary Specifications identify work scopes for which this Subcontractor is not wholly responsible but shall be applicable as it relates to the execution of Primary Specification Responsibilities. This may include a varying degree of responsibility from simple coordination to performing entire portions of work. The Secondary Specifications are not intended to be all inclusive and shall not limit the Subcontractor in any way with regards to installation of work identified in Primary Specification Responsibilities.

The **Resilient Flooring, Athletic Flooring, Base, and Accessories** Subcontractor is responsible for all Work described herein and below unless specifically noted otherwise to be part of another Subcontractor's Scope of Work.

Prior to commencing with the installation of any work, this Subcontractor shall field verify and provide the General Contractor with written confirmation that all areas scheduled to receive the materials provided as part of this Scope of Work are in a condition acceptable to this Subcontractor. Failure to notify the General Contractor in writing of such acceptance prior to commencing any work shall constitute this Subcontractor's acceptance of the applicable areas.

The drawings, details and specifications do not necessarily indicate or describe all work required for the full performance and completion of the requirements of the Contract Documents. This Subcontractor shall use

all reasonable care to include those items necessary and/or implied to fill foreseeable gaps, omissions or conflicts that prevent a complete and functioning system even though it may not be detailed.

Provide all shop drawings, stamped drawings, calculations, submittals, samples, mock-ups, certificates, qualifications, etc. as required for approval by Architect/Engineer, and/or local governing authorities in a timely manner to avoid delaying the project.

9.0 RESILIENT FLOORING SCOPE OF WORK DESCRIPTION

~~9.0~~

9.0.1 Subcontractor shall furnish and install all Resilient Tile Flooring, per the contract documents and manufacturer's requirements. This includes but is not limited to solid vinyl floor tile (LVT-1, LVT-2, and CPT-1 ~~LVT-3, LVT-4, LVT-5, and VCT-1~~), ~~trowel able~~ leveling and patching compounds, primer, adhesive, transitions, etc. per the contract documents and manufacturer's requirements.

9.0.2 Subcontractor shall furnish and install all Resilient Athletic Flooring, per the contract documents and manufacturer's requirements. This includes but is not limited to rubber sheet flooring (ARF-1)~~(RBF-1, RBF-2, and RBF-3)~~, ~~trowel able~~ leveling and patching compounds, primer, adhesive, transitions, etc. per the contract documents and manufacturer's requirements.

9.0.3 Subcontractor shall furnish and install all Resilient Base and Accessories, per the contract documents and manufacturer's requirements. This includes but is not limited to ~~thermoplastic rubber base~~ Resilient Base (RB-1 and RB-2) ~~trowel able~~ leveling and patching compounds, primer, adhesive, transitions, etc. per the contract documents and manufacturer's requirements.

9.0.4 By installing product, this Subcontractor accepts the condition of the substrate upon which its products are attached. Should this Subcontractor find any substrate not acceptable, the Subcontractor must let the General Contractor know in a timely manner as not to delay the schedule or installation.

9.0.5 Subcontractor has included cleaning of all adhesives and/or residues from installation of its products, as necessary.

9.0.6 Subcontractor shall provide all product samples and available standard finishes to General Contractor for final selection by Owner and Interior Designer. All samples shall be provided at no additional cost.

9.0.7 Subcontractor shall install flooring continuous under the kitchen and vanity sinks as required to meet accessibility requirements, per the contract documents.

9.0.8 Any variance in color, texture and quality of materials included in this agreement will not be accepted. All materials shall be from the same run/dye lot for the complete project.

9.0.9 Subcontractor is responsible for cutting of flooring around all fixtures, outlets, drains, accessories, etc. to obtain a neat finish.

9.0.10 Subcontractor is responsible for any/all layout of any required patterns.

9.0.11 Any and all floor preparation required to complete this scope of work is included in this agreement, including but not limited to cleaning subsurface, buffing, sanding, scraping, broom sweeping, and removal of all dirt/debris/material, etc. that will cause imperfections in the finish floor materials are the responsibility of this Subcontractor. Floor leveling should be expected and will be the responsibility of this Subcontractor. Any leveling less than ¼" in 10' or per the contract documents (whichever is more stringent) is the responsibility of this Subcontractor. This also includes the feathering to transition to adjacent floor systems is included in this scope of work. This Subcontractor shall provide all joint preparation required to complete this work (including but not limited to concrete control joints, cracks in slabs etc.) All floor preparation shall be with materials as specified and/or required from manufacturers installation and application requirements.

9.0.12 Provide all caulking and sealant where the materials in this scope of work adjoin dissimilar finishes already in place. This includes but not limited to the following: base of door frames, intersection of dissimilar materials, etc. per the contract documents.

9.0.13 Provide attic stock materials in accordance with the contract documents. Including delivery and off-loading to a designated area or location.

9.0.14 This Subcontractor is to provide flooring protection at no additional cost to the Owner or General Contractor.

—OTHER SCHEDULE SUMMARY INFORMATION—

The Substantial Completion date for the Sitework Subcontractor is as reflected within the Construction Schedule. Special attention should be directed to the Construction Schedule for project sequencing requirements which are a requirement of this Scope of Work.

END OF SECTION
TRADE PACKAGE SCOPE OF WORK:
09C RESILIENT FLOORING, ATHLETIC FLOORING, BASE, AND ACCESSORIES SUBCONTRACT

TRADE PACKAGE SCOPE OF WORK

09D – FINISHES (CERAMIC TILING – SCHULTER – QUARTZ THRESHOLD) ~~HARD TILE SUBCONTRACT~~

Furnish all labor, materials, tools, taxes, safety, insurances, equipment, hoisting, cranes, supervision, and all other incidentals necessary to accomplish all **FINISHES (CERAMIC TILING – SCHULTER – QUARTZ THRESHOLD) ~~Hard Tile~~** Subcontract Work in accordance with all Contract Documents and as defined within **Trade Package General Scope Requirements** and this Scope of Work.

Subcontractors/Suppliers performing work on multiple portions of the project site (i.e., buildings, parking area, site, etc.) shall provide separate equipment, hoisting, cranes, full-time English-speaking supervision including, but not limited to management, superintendent, on site foreman, tradesman, laborers, etc. for each portion unless agreed to otherwise in writing by the General Contractor. If the project needs and schedule are not being met to the satisfaction of the General Contractor, written approval will be rescinded, and the original staffing requirements shall be provided by the Subcontractor.

Project Specifications for the **Hard Tile** Scope of Work are listed below. This Subcontractor or Supplier shall carefully examine all specification sections and drawings within the Contract Documents and be responsible for all work described within this Scope of Work and as required on the project.

PROJECT SPECIFICATIONS

This Subcontractor is responsible for all Division 01 - General Requirements as listed below prepared by the Architect, Design Consultants, and/or General Contractor or as designated elsewhere within the Technical Specifications or Drawings as applicable to this Trade Package Scope of Work.

DIVISION 01 – GENERAL REQUIRMENTS	
GC Req.	General Requirements Manual
GC Req.	Trade Package Scope Manual
GC Req.	Trae Package General Scope Requirements
Division 01	All Division 01 Specification as Required by Samet Corporation

Primary Responsibility

This Subcontractor is responsible for all Primary Specification Responsibilities listed below unless this Scope of Work specifically states otherwise.

PRIMARY TECHNICAL SPECIFICATION RESPONSIBILITIES (PROJECT MANUAL)	
	Specifications are included on the Drawings
09-30-13	Ceramic Tiling – Schluter – Quartz Threshold

Secondary Responsibility

This Subcontractor is responsible for all Secondary Specification Responsibilities listed below to the extent applicable, or defined, within this Scope of Work.

SECONDARY TECHNICAL SPECIFICATION RESPONSIBILITIES	
	Specifications are included on the Drawings
Gen. Note	**This Subcontractor is responsible for complete Specifications package as it relates to the Resilient Flooring, Base, and Accessories Scope of Work.**
Division 03	Concrete
Division 07	Thermal Moistures
Division 08	Openings
Division 09	Finishes
Division 22	Plumbing

The **Hard Tile** Subcontractor shall be responsible for complying with the requirements of each Scope of Work Description / Clarification Section listed below, **even if** those requirements are not shown within the Specification Sections listed above.

This Subcontractor shall be responsible for all Primary Specification Responsibilities identified above in their entirety. All costs associated with Primary Specification Responsibilities shall be included in this Subcontractor's Scope of Work and reflected in bid amount.

This Subcontractor shall be at least partially responsible for Secondary Specification Responsibilities identified above. The Secondary Specifications identify work scopes for which this Subcontractor is not wholly responsible but shall be applicable as it relates to the execution of Primary Specification Responsibilities. This may include a varying degree of responsibility from simple coordination to performing entire portions of work. The Secondary Specifications are not intended to be all inclusive and shall not limit the Subcontractor in any way with regards to installation of work identified in Primary Specification Responsibilities.

The **Hard Tile** Subcontractor is responsible for all Work described herein and below unless specifically noted otherwise to be part of another Subcontractor's Scope of Work.

Prior to commencing with the installation of any work, this Subcontractor shall field verify and provide the General Contractor with written confirmation that all areas scheduled to receive the materials provided as part of this Scope of Work are in a condition acceptable to this Subcontractor. Failure to notify the General Contractor in writing of such acceptance prior to commencing any work shall constitute this Subcontractor's acceptance of the applicable areas.

The drawings, details and specifications do not necessarily indicate or describe all work required for the full performance and completion of the requirements of the Contract Documents. This Subcontractor shall use all reasonable care to include those items necessary and/or implied to fill foreseeable gaps, omissions or conflicts that prevent a complete and functioning system even though it may not be detailed.

Provide all shop drawings, stamped drawings, calculations, submittals, samples, mock-ups, certificates, qualifications, etc. as required for approval by Architect/Engineer, and/or local governing authorities in a timely manner to avoid delaying the project.

See below for all safety submittals required throughout the duration of the project:

THERMAL AND MOISTURE PROTECTION SCOPE OF WORK DESCRIPTION

7.0.1 Subcontractor shall be responsible for providing all joint sealants, etc. required to complete all work provided as part of this Subcontract, including but not limited to, joint sealant work at expansion or control joints in the tile as recommended by the tile manufacturer.

9.0 RESILIENT FLOORING SCOPE OF WORK DESCRIPTION

9.0.1 Subcontractor shall furnish and install all Hard/Ceramic Tile Flooring, per the contract documents and manufacturer's requirements. trowel able leveling and patching compounds, primer, adhesive, transitions, etc. per the contract documents and manufacturer's requirements.

9.0.2 By installing product, this Subcontractor accepts the condition of the substrate upon which its products are attached. Should this Subcontractor find any substrate not acceptable, the Subcontractor must let the General Contractor know in a timely manner as not to delay the schedule or installation.

9.0.3 Subcontractor has included cleaning of all adhesives and/or residues from installation of its products, as necessary.

9.0.4 Subcontractor shall provide all product samples and available standard finishes to General Contractor for final selection by Owner and Interior Designer. All samples shall be provided at no additional cost.

9.0.5 Any variance in color, texture and quality of materials included in this agreement will not be accepted. All materials shall be from the same run/dye lot for the complete project.

9.0.6 Subcontractor is responsible for cutting of flooring around all fixtures, outlets, drains, accessories, etc. to obtain a neat finish.

9.0.7 Subcontractor is responsible for any/all layout of any required patterns as well as coordinating with the additional flooring contractors to ensure the scope of work aligns with the contract documents. ~~.~~

9.0.8 Any and all preparation required to complete this scope of work is included in this agreement, including but not limited to cleaning subsurface, buffing, sanding, scraping, broom sweeping, and removal of all dirt/debris/material, etc. that will cause imperfections in the finish floor materials are the responsibility of this Subcontractor. Floor leveling should be expected and will be the responsibility of this Subcontractor. Any leveling less than ¼" in 10' or per the contract documents

(whichever is more stringent) is the responsibility of this Subcontractor. This also includes the feathering to transition to adjacent floor systems is included in this scope of work. This Subcontractor shall provide all joint preparation required to complete this work (including but not limited to concrete control joints, cracks in slabs etc.) All floor preparation shall be with materials as specified and/or required from manufacturers installation and application requirements.

9.0.9 Provide all caulking and sealant where the materials in this scope of work adjoin dissimilar finishes already in place. This includes but not limited to the following: base of door frames, intersection of dissimilar materials, etc. per the contract documents.

9.0.10 Provide attic stock materials in accordance with the contract documents. Including delivery and off-loading to a designated area or location.

—OTHER SCHEDULE SUMMARY INFORMATION—

The Substantial Completion date for the Sitework Subcontractor is as reflected within the Construction Schedule. Special attention should be directed to the Construction Schedule for project sequencing requirements which are a requirement of this Scope of Work.

END OF SECTION
TRADE PACKAGE SCOPE OF WORK:
09C RESILIENT FLOORING, BASE, AND ACCESSORIES SUBCONTRACT

TRADE PACKAGE SCOPE OF WORK

09H PAINTING SUBCONTRACT

Furnish all labor, materials, tools, taxes, safety, insurances, equipment, hoisting, cranes, supervision, and all other incidentals necessary to accomplish all **Painting** Subcontract Work in accordance with all Contract Documents and as defined within **Trade Package General Scope Requirements** and this Scope of Work.

Subcontractors/Suppliers performing work on multiple portions of the project site (i.e., buildings, parking area, site, etc.) shall provide separate equipment, hoisting, cranes, full-time English-speaking supervision including, but not limited to management, superintendent, on site foreman, tradesman, laborers, etc. for each portion unless agreed to otherwise in writing by the General Contractor. If the project needs and schedule are not being met to the satisfaction of the General Contractor, written approval will be rescinded, and the original staffing requirements shall be provided by the Subcontractor.

Project Specifications for the **Painting** Scope of Work are listed below. This Subcontractor or Supplier shall carefully examine all specification sections and drawings within the Contract Documents and be responsible for all work described within this Scope of Work and as required on the project.

PROJECT SPECIFICATIONS

This Subcontractor is responsible for all Division 01 - General Requirements as prepared by the Architect, Design Consultants, and/or General Contractor or as designated elsewhere within the Technical Specifications or Drawings as applicable to this Trade Package Scope of Work.

DIVISION 01 – GENERAL REQUIRMENTS	
GC Req.	General Requirements Manual
GC Req.	Trade Package Scope Manual
GC Req.	Trae Package General Scope Requirements
Division 01	All Division 01 Specification as Required by Samet Corporation

Primary Responsibility

This Subcontractor is responsible for all Primary Specification Responsibilities listed below unless this Scope of Work specifically states otherwise.

PRIMARY TECHNICAL SPECIFICATION RESPONSIBILITIES (PROJECT MANUAL)	
	Specifications are included on the Drawings
07-92-00	Joint Sealants
074600	Siding
071800	Methyl Methacrylate Coatings (MMA)
Division 08	Openings (Door Frames)
09-91-12	Painting ~~(Professional Line Products)~~
Division 23	Mechanical (Natural Gas Piping)

Secondary Responsibility

This Subcontractor is responsible for all Secondary Specification Responsibilities listed below to the extent applicable, or defined, within this Scope of Work.

SECONDARY TECHNICAL SPECIFICATION RESPONSIBILITIES	
	Specifications are included on the Drawings
Gen. Note	**This Subcontractor is responsible for complete Specifications package as it relates to the Painting Scope of Work.**
Division 03	Concrete
Division 04	Masonry
Division 05	Metals
Division 06	Wood, Plastics, and Composites
Division 07	Thermal Moistures
Division 08	Openings
Division 09	Finishes

The **Painting** Subcontractor shall be responsible for complying with the requirements of each Scope of Work Description / Clarification Section listed below, **even if** those requirements are not shown within the Specification Sections listed above.

This Subcontractor shall be responsible for all Primary Specification Responsibilities identified above in their entirety. All costs associated with Primary Specification Responsibilities shall be included in this Subcontractor's Scope of Work and reflected in bid amount.

This Subcontractor shall be at least partially responsible for Secondary Specification Responsibilities identified above. The Secondary Specifications identify work scopes for which this Subcontractor is not wholly responsible but shall be applicable as it relates to the execution of Primary Specification Responsibilities. This may include a varying degree of responsibility from simple coordination to performing entire portions of work. The Secondary Specifications are not intended to be all inclusive and shall not limit the Subcontractor in any way with regards to installation of work identified in Primary Specification Responsibilities.

The **Painting** Subcontractor is responsible for all Work described herein and below unless specifically noted otherwise to be part of another Subcontractor's Scope of Work.

Prior to commencing with the installation of any work, this Subcontractor shall field verify and provide the General Contractor with written confirmation that all areas scheduled to receive the materials provided as part of this Scope of Work are in a condition acceptable to this Subcontractor. Failure to notify the General Contractor in writing of such acceptance prior to commencing any work shall constitute this Subcontractor's acceptance of the applicable areas.

The drawings, details and specifications do not necessarily indicate or describe all work required for the full performance and completion of the requirements of the Contract Documents. This Subcontractor shall use

all reasonable care to include those items necessary and/or implied to fill foreseeable gaps, omissions or conflicts that prevent a complete and functioning system even though it may not be detailed.

Provide all shop drawings, stamped drawings, calculations, submittals, samples, mock-ups, certificates, qualifications, etc. as required for approval by Architect/Engineer, and/or local governing authorities in a timely manner to avoid delaying the project.

7.0 JOINT SEALANT SCOPE OF WORK DESCRIPTION

7.0.1 Joint Sealants - This work shall include a complete Joint Sealant System, including but not limited to, all specified warranties, sealants, backing, primer, cleaners, bond breaker tape, masking tape, accessory materials, etc. that are integral to the painting scope, per the contract documents. Include tooling, cleaning, and protection of all sealant joints.

7.0.2 Subcontractor is responsible for sealant of joints between this scope of work and dissimilar materials, per the manufacturer's recommendations and contract documents.

7.0.3 Subcontractor is to furnish and install all required caulking at all painted surfaces of the project. These caulked areas are to include, but not be limited to, windows, doors, exterior trim, interior trim, siding, and interior & exterior door frames ~~sills~~, etc. Further, if deemed necessary by the General Contractor & Owner, this subcontractor shall use caulking compound in a color to match the building finish or of painted nature.

~~7.0.3~~7.0.4 This Subcontractor shall be responsible for all sealed concrete, methyl methacrylate coatings, and striping as per the contract documents. This includes all surface preparation and joint filler as required by the manufacturer installation guidelines. Final color and striping pattern will be determined by owner and installed by this subcontractor.

9.0 PAINTING SCOPE OF WORK DESCRIPTION

9.0.1 This Subcontractor shall provide all **Interior** painting and staining. This scope shall include but is not limited to preparation and painting of the following: drywall partitions, bollards, gas-lines, ceilings, wood, bulkheads, soffits, fascia, concrete walls/columns, reveals that are not scheduled to be prefinished, doors and window frames which do not have a factory finish, decorative rails, exposed CMU masonry, block filler, exposed concrete, unfinished or exposed miscellaneous metal surfaces: examples include structural and miscellaneous steel stairs, stringers, channels, plates, railings, pickets, supports, brackets, grilles and other shop primed miscellaneous metals, etc., exposed steel with or without fireproofing, exposed structure, piping, supports and other non-pre-finished devices in mechanical, electrical, telecom, elevator, other utility areas, etc. per the contract documents.

9.0.2 This Subcontractor shall provide all **Exterior** painting and staining. This shall include preparation and painting of the following: window trim, gypsum board, exterior metals, bollards, siding, exterior doors and frames (both interior and exterior sides) which do not have a factory finish, lintels, shelf angles, exposed steel, MEP equipment supports, roof hatches, ceilings, soffits, non-finished roof

equipment, exposed rough carpentry and heavy timber, pipe bollards, handrails, ladders, grilles, downspout boots, and all other non-finished surfaces per the contract documents.

9.0.3 This Subcontractor shall examine areas and conditions under which painting work is to be applied and notify General Contractor in writing of conditions detrimental to proper and timely completion of work. Starting of painting work will be construed as acceptance of surfaces and conditions within that area. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions otherwise detrimental to formation of a durable paint finish.

9.0.4 This Subcontractor shall ensure, at a minimum, that all surfaces to be painted have a complete primer coat of paint and two (2) coats of finish paint or use multiple coats to produce a glass-smooth surface film of even luster. ~~.~~ Furthermore, minimum coating thickness as recommended by the coating manufacturer or project specifications must also be achieved. The Painting Subcontractor shall ensure that sufficient time has elapsed between successive coatings to permit proper drying to ensure that application of another coat of paint does not cause lifting or loss of adhesion of the undercoat.

~~9.0.5 This Subcontractor shall provide all preparation and painting of all exterior gypsum board, exterior CMU/masonry, exterior metals, exterior doors and frames (both interior and exterior sides) which do not have a factory finish, lintels, shelf angles, exposed steel and deck, MEP equipment supports and pipes, roof hatches, ceilings, soffits, pipe bollards, handrails, ladders, grilles, and all other non-finished surfaces, per the contract documents.~~

~~9.0.6~~9.0.5 This Subcontractor shall furnish and install all identification of fire and smoke-rated walls per the contract documents. Permanently label fire and smoke rated walls, partitions, and barriers with the words using stenciled lettering. Confirm labeling requirements with the General Contractor to align with all code requirements.

~~9.0.7~~9.0.6 Provide painting of all exposed and covered fire suppression, plumbing, HVAC, electrical, communication, security work, natural gas piping, and other work and equipment including but not limited to pipe, conduit, hangers, exposed steel, iron work, primed metal surfaces, etc. as required by the contract documents including Mechanical, Plumbing, and Electrical specifications and/or local authorities having jurisdiction.

~~9.0.8~~9.0.7 Provide painting of all access doors and frames (even if not shown on the contract documents) on the front and backsides. Subcontractor should also include painting any other specialties noted in documents to be painted.

~~9.0.9~~9.0.8 Provide painting of all walls, ceiling cavities, and any duct, piping, conduit that is visible to include anything behind reveals in acoustical ceiling panels, mechanical louvers, etc. per the contract documents.

~~9.0.10 Provide all epoxy painting of CMU including block filler. Masonry block filler shall be applied in thick coats and shall result in an even well filled appearance for the masonry block units as shown and~~

~~specified. This Subcontractor shall notify General Contractor of any block work that is nonconforming prior to painting any finish coats on the masonry.~~

~~9.0.11~~9.0.9 Provide all preparation and painting of cementitious surfaces of concrete and concrete block, per the contract documents.

~~9.0.12~~9.0.10 Provide surface preparation, priming, and coats of paint specified in addition to shop-priming and surface treatments specified under other sections of the work.

~~9.0.13~~9.0.11 Provide all preparation and painting of stairs to include all exposed metal surfaces. Subcontractor shall assure that finish on subsurface is free of imperfections and clean prior to painting. Cleaning, sanding of rust spots, and prepping subsurface is to be included by this Subcontractor prior to placing paint.

~~9.0.14~~9.0.12 Provide all preparation and painting/staining of wood surfaces and trim including priming, fill holes, and imperfections in finish surfaces.

~~9.0.15~~9.0.13 Provide all elastomeric and high-performance coatings as indicated on the contract documents including epoxy paints. Subcontractor shall assure that finish on subsurface is free of imperfections and clean prior to painting. Cleaning or prepping subsurface to receive these coatings is to be included by this Subcontractor prior to placing paint. All adjoining surfaces shall be protected by this Subcontractor. High performance coatings shall be installed by a certified subcontractor as indicated in the contract documents.

~~9.0.16~~9.0.14 Subcontractor shall sand, smooth edges, wood fill, dust, varnish and stain/paint, and wax as required all unfinished or primed millwork, architectural woodwork, and trim. Fill all nail holes prior to painting/staining all heavy timber, pressure treated rough carpentry, wood rail, and trim as required by contract documents.

~~9.0.17~~9.0.15 Paint all Electrical and Data Room plywood backboards with appropriate coating unless specified otherwise. Do not paint over fire-retardant verification label on backboards. Do not paint over any code-required labels or equipment identification, performance ratings, name, or nomenclature plates. Do not paint over thermostats, fire alarm devices, sprinkler heads, or any fire safety devices.

~~9.0.18~~9.0.16 Provide painting of all walls, ceiling, exposed structure/misc. steel/pipe/duct/etc., mechanical, plumbing, electrical, fire protection, etc. work in strict accordance with contract documents and as required by authorities having jurisdiction.

~~9.0.19~~9.0.17 This contractor shall provide a separate 2’ wide band of finish paint at ceiling height after first coat to facilitate ceiling grid installation as directed by General Contractor.

~~9.0.20 Provide painting of all stairwells and stairwell components from the lowest level to the roof. This includes but is not limited to walls, floors, ceilings, stringers, risers, treads, landing, railings, door,~~

~~and frames (both interior and exterior sides), etc. per the contract documents.~~

~~9.0.21~~9.0.18 Provide painting of all exterior site item components including but not limited to railings, gates, mechanical and electrical equipment support steel, signage supports, etc. per the contract documents.

~~9.0.22 Provide painting of all fire suppression, plumbing, HVAC, electrical, communication, electronic safety and security work and other equipment as required by the Contract Documents including Mechanical, Electrical, and Electrical specifications and/or local authorities. This shall include color coding, piping, hangers, conduit, ductwork, standpipes, equipment, etc. Labeling of piping is by others.~~

~~9.0.23 The Structural Steel Subcontractor will provide shop primer on structural steel, miscellaneous steel, etc. as specified within the Drawings. Furthermore, the Painting Subcontractor shall reference other Sections contained within the Drawings for other materials (i.e. Hollow metal door frames, etc.) which may be provided by another Trade Subcontractor as shop primed, thus not needing a full primer coat provided by this Scope of Work. However, the Painting Subcontractor shall be responsible for providing primer coats on all materials not being specifically designated to be provided by a specific Trade Subcontractor as shop primed.~~

~~9.0.24~~9.0.19 The Painting Subcontractor shall include primer touch-up of weld marks created by the Structural Steel Subcontractor at exposed steel areas scheduled to receive finish painting. The Painting Subcontractor shall also spot prime pre-primed items (i.e. Hollow metal frames, steel, etc.) as necessary prior to the applicable items receiving its first coat of paint as part of this Scope of Work.

~~9.0.25~~9.0.20 All surface prep work required for the proper installation of this Scope of Work shall be provided by this Subcontractor. Miscellaneous prep work shall include but is not limited to the following: cleaning of all substrates, remove all oils, grease, dust, dirt, efflorescence, chalk, residues, incompatible paints and compounds, crack patching, high spot sanding, etc. as required by the Contract Documents. This Subcontractor shall include any prep work or priming of steel or MEP materials that have galvanized coatings to which paint will not adhere. Touch-up of chipped or abraded places on shop primed items is also to be included. Mechanical methods of surface preparation shall be provided as required. Removal and re-installation of doors, if necessary, to paint or seal the top or bottom edges is included in this Scope of Work.

~~9.0.26~~9.0.21 The Final Building Cleaning Subcontractor shall provide the final cleaning of the painting work just prior to final acceptance of this work by the General Contractor, Designer, and Owner. The Painting Subcontractor shall provide the General Contractor with written directions as “how to properly maintain and clean” the applicable painted surfaces to ensure the Final Building Cleaning Subcontractor utilizes the proper materials and techniques when performing the final cleaning of the applicable painted surfaces. Additionally, this Subcontractor shall instruct the Owner’s maintenance staff of proper methods to clean and maintain the applicable painted surfaces to maximize the longevity of the applicable paint system.

~~9.0.27~~9.0.22 Prior to the install of any wall coverings (by others), provide all interior caulking and sealant where the materials in this Scope of Work adjoin dissimilar finishes (all painted to painted and painted to unpainted surfaces) already in place installed by others. These areas include, but are not limited to: wall to ceiling drywall or acoustical grid joints, non-rated interior masonry control joints, perimeter of all door and window frames (including inside of exterior storefront windows and doors), and any other painted surface adjoining another finished material, trim, etc.)

~~9.0.28~~9.0.23 Provide all labor and materials required to fill minor dents and dings in hollow metal doors and frames. This is to include sanding smooth to be ready to accept paint. Subcontractor shall notify the General Contractor if any doors or frames are damaged beyond minor Bondo repair work.

~~9.0.29~~9.0.24 Provide attic stock materials in accordance with the contract documents. Including delivery and off-loading to a designated area or location.

~~9.0.30 All pricing for this scope of work is locked in for the duration of this project, unless noted otherwise in this subcontract agreement. Manufacturers or material price increases, excluding tariffs, will not be considered as an additional reimbursable cost unless specifically stated in this subcontract.~~

—OTHER SCHEDULE SUMMARY INFORMATION—

The Substantial Completion date for the Siding Subcontractor is as reflected within the Construction Schedule. Special attention should be directed to the Construction Schedule for project sequencing requirements which are a requirement of this Scope of Work.

END OF SECTION
TRADE PACKAGE SCOPE OF WORK:
09H PAINTING SUBCONTRACT

TRADE PACKAGE SCOPE OF WORK

10A SPECIALTIES AND ACCESSORIES SCOPE OF WORK ~~AND ACCESSORIES~~

Furnish all labor, materials, tools, taxes, safety, insurances, equipment, hoisting, cranes, supervision, and all other incidentals necessary to accomplish all **Specialties and Accessories** Subcontract Work in accordance with all Contract Documents and as defined within **Trade Package General Scope Requirements** and this Scope of Work.

Subcontractors/Suppliers performing work on multiple portions of the project site (i.e., buildings, parking area, site, etc.) shall provide separate equipment, hoisting, cranes, full-time English-speaking supervision including, but not limited to management, superintendent, on site foreman, tradesman, laborers, etc. for each portion unless agreed to otherwise in writing by the General Contractor. If the project needs and schedule are not being met to the satisfaction of the General Contractor, written approval will be rescinded, and the original staffing requirements shall be provided by the Subcontractor.

Project Specifications for the **Specialties and Accessories** Scope of Work are listed below. This Subcontractor or Supplier shall carefully examine all specification sections and drawings within the Contract Documents and be responsible for all work described within this Scope of Work and as required on the project.

PROJECT SPECIFICATIONS

This Subcontractor is responsible for all Division 01 - General Requirements as listed below prepared by the Architect, Design Consultants, and/or General Contractor or as designated elsewhere within the Technical Specifications or Drawings as applicable to this Trade Package Scope of Work.

DIVISION 01 – GENERAL REQUIRMENTS	
GC Req.	General Requirements Manual
GC Req.	Trade Package Scope Manual
GC Req.	Trae Package General Scope Requirements
Division 01	All Division 01 Specification as Required by Samet Corporation

Primary Responsibility

This Subcontractor is responsible for all Primary Specification Responsibilities listed below unless this Scope of Work specifically states otherwise.

PRIMARY TECHNICAL SPECIFICATION RESPONSIBILITIES (PROJECT MANUAL)	
Gen. Note	**Specifications are included on the Drawings**
~~10 21 13.19~~	~~Plastic Toilet Compartments~~
10-26-50	Impact- Resistant Wall Protection
10-28-010	~~Toilet, Bath, and Laundry Accessories~~ Toilet and Bath Accessories
10-51-13.01	Metal Lockers – Single Tier
10-51-43	Metal Lockers – Turn Out Gear - LK
107516	Flag Poles – Ground Set

Secondary Responsibility

This Subcontractor is responsible for all Secondary Specification Responsibilities listed below to the extent applicable, or defined, within this Scope of Work.

SECONDARY TECHNICAL SPECIFICATION RESPONSIBILITIES	
	Specifications are included on the Drawings
Gen. Note	**This Subcontractor is responsible for complete Specifications package as it relates to the Specialties and Accessories Scope of Work.**
Division 03	Concrete
Division 05	Metals
Division 06	Wood, Plastics, and Composites
Division 07	Thermal Moistures
Division 08	Openings
Division 09	Finishes
Division 22	Plumbing
Division 32	Exterior Improvements

The **Specialties and Accessories ~~and Accessories~~** Subcontractor shall be responsible for complying with the requirements of each Scope of Work Description / Clarification Section listed below, **even if** those requirements are not shown within the Specification Sections listed above.

This Subcontractor shall be responsible for all Primary Specification Responsibilities identified above in their entirety. All costs associated with Primary Specification Responsibilities shall be included in this Subcontractor's Scope of Work and reflected in bid amount.

This Subcontractor shall be at least partially responsible for Secondary Specification Responsibilities identified above. The Secondary Specifications identify work scopes for which this Subcontractor is not wholly responsible but shall be applicable as it relates to the execution of Primary Specification Responsibilities. This may include a varying degree of responsibility from simple coordination to performing entire portions of work. The Secondary Specifications are not intended to be all inclusive and shall not limit the Subcontractor in any way with regards to installation of work identified in Primary Specification Responsibilities.

The **Specialties and Accessories** Subcontractor is responsible for all Work described herein and below unless specifically noted otherwise to be part of another Subcontractor's Scope of Work.

Prior to commencing with the installation of any work, this Subcontractor shall field verify and provide the General Contractor with written confirmation that all areas scheduled to receive the materials provided as part of this Scope of Work are in a condition acceptable to this Subcontractor. Failure to notify the General Contractor in writing of such acceptance prior to commencing any work shall constitute this Subcontractor's acceptance of the applicable areas.

The drawings, details and specifications do not necessarily indicate or describe all work required for the full performance and completion of the requirements of the Contract Documents. This Subcontractor shall use all reasonable care to include those items necessary and/or implied to fill foreseeable gaps, omissions or conflicts that prevent a complete and functioning system even though it may not be detailed.

Provide all shop drawings, stamped drawings, calculations, submittals, samples, mock-ups, certificates, qualifications, etc. as required for approval by Architect/Engineer, and/or local governing authorities in a timely manner to avoid delaying the project.

See below for all safety submittals required throughout the duration of the project:

10.0 SPECIALTIES AND ACCESSORIES SCOPE OF WORK DESCRIPTION

10.0.1 This Subcontractor shall furnish all labor, materials, equipment, tools, taxes, lifting and hoisting, insurance, supervision, and any other incidentals necessary to provide a complete Specialties and Accessories scope of work. This Subcontractor shall be responsible for all impact resistant wall protection, toilet and bath accessories, ~~compartments, toilet / bath / laundry accessories~~, ~~fire protection cabinets,~~ metal lockers, flag poles (ground set), and metal storage shelving, etc. as specified in the contract documents, required by Authorities Having Jurisdiction, and as noted herein. The following scope items are not intended to be all-inclusive but are merely used to highlight some of the major scope items.

~~10.0.1~~10.0.2 Impact Resistant Wall Protection – This Subcontract is responsible for providing the necessary labor and materials to complete the scope of work per the contract documents. This includes FRP, wall impact bumpers, wall guards, and corner guards.

~~10.0.2 Toilet Compartments – This Work shall include **furnishing and installing** materials for a complete Toilet Compartment system including but not limited to, all toilet partitions, urinal screens, pilasters, head rails, hinges, latches, door stops, brackets, hardware, fasteners, etc. at all locations, per the Contract Documents.~~

10.0.3 ~~Toilet, Bath, and Laundry Accessories~~ Toilet and Bath Accessories - ~~This Work shall include **installing** materials provided by the Owner~~ This Subcontractor is responsible for providing the necessary labor and materials for a complete toilet and bath accessories system ~~Toilet, Bath, and Laundry Accessories System~~, including but not limited to, grab bars, framed mirrors, toilet tissue dispensers, sanitary napkin dispensers, paper towel dispensers and disposal, folding shower seats, ADA shower bench, recessed mounted changing station, shower curtains and rods, shelf with mop hooks, plastic toilet partitions, robe hooks, ~~under lavatory guards,~~ anchors, fasteners, hardware, miscellaneous accessories, caulking/sealants, etc. as required per the contract documents. ~~to complete all Toilet, Bath, and Laundry Accessories Work at all locations, per the Contract Documents~~.

10.0.4 Metal Lockers - This Work shall include **furnishing and installing** a complete Locker System,

including but not limited to, lockers, turnout gear lockers, recessed door handle and latch, identification plates, hooks, legs, filler panels, combination padlocks, fasteners, anchors, adhesives, miscellaneous accessories, etc. as required to complete all Locker Work at all locations, per the Contract Documents. ~~Men's and Women's Locker room lockers only, .~~ Gear room lockers are by the Owner.

~~10.0.4~~10.0.5 Flag Poles – This Subcontractor shall provide the necessary labor and materials to install the flag pole(s) per the contract documents. This includes all excavation, sitework, concrete, foundation, engineered drawings/structural calculations, and samples, etc. for a complete flag pole scope of work.

~~10.0.5 Owner Provided, Contractor Installed Items – This Subcontractor shall **install** all items covered under this Scope and noted in the Contract Documents as Owner Provided, Contractor Installed.~~

10.0.6 This Subcontractor shall take field measurements of existing conditions prior to fabrication and installation of all material to ensure proper fit of all Work included in this Scope.

~~10.0.6~~10.0.7 This Subcontractor shall coordinate with the Electrical, Plumbing, Framer, Sitework, Landscape and General Contractor prior to performing this scope of work.

~~10.0.7~~10.0.8 Subcontractor shall coordinate blocking and rough opening requirements for this scope of work with the General Contractor and Metal Stud Framing Subcontractor.

—OTHER SCHEDULE SUMMARY INFORMATION—

The Substantial Completion date for the Sitework Subcontractor is as reflected within the Construction Schedule. Special attention should be directed to the Construction Schedule for project sequencing requirements which are a requirement of this Scope of Work.

END OF SECTION

Exhibit A
Gordon Road Fire Station
Wilmington, NC
Samet Project # 23-072

TRADE PACKAGE SCOPE OF WORK

10B SIGNS and (Accessories)~~AGE~~ SCOPE OF WORK SUBCONTRACT

Furnish all labor, materials, tools, taxes, safety, insurances, equipment, hoisting, cranes, supervision, and all other incidentals necessary to accomplish all **Signsage and Accessories** Work in accordance with all Contract Documents and as defined within **Trade Package General Scope Requirements** and this Scope of Work.

Subcontractors/Suppliers performing work on multiple portions of the project site (i.e., buildings, parking area, site, etc.) shall provide separate equipment, hoisting, cranes, supervision including, but not limited to management, superintendent, foreman, tradesman, laborers, etc. for each portion unless agreed to otherwise in writing by the General Contractor. If the project needs and schedule are not being met to the satisfaction of the General Contractor, written approval will be rescinded, and the original staffing requirements shall be provided by the Subcontractor.

Project Specifications for the **Signsage and Accessories** Scope of Work are listed below. This Subcontractor or Supplier shall carefully examine all specification sections and drawings within the Contract Documents and be responsible for all work described within this Scope of Work and as required on the project.

PROJECT SPECIFICATIONS
This Subcontractor is responsible for all Division 01 - General Requirements as listed below prepared by the Architect, Design Consultants, and/or General Contractor or as designated elsewhere within the Technical Specifications or Drawings as applicable to this Trade Package Scope of Work.

DIVISION 01 – GENERAL REQUIRMENTS	
GC Req.	General Requirements Manual
GC Req.	Trade Package Scope Manual
GC Req.	Trae Package General Scope Requirements
Division 01	All Division 01 Specification as Required by Samet Corporation

Primary Responsibility
This Subcontractor is responsible for all Primary Specification Responsibilities listed below unless this Scope of Work specifically states otherwise.

PRIMARY TECHNICAL SPECIFICATION RESPONSIBILITIES (PROJECT MANUAL)	
Gen. Note	**Specifications are included on the Drawings**
~~32 17 00~~	~~Pavement Markings, Signs, and Specialties~~
101418	Signs

Secondary Responsibility

This Subcontractor is responsible for all Secondary Specification Responsibilities listed below to the extent applicable, or defined, within this Scope of Work.

SECONDARY TECHNICAL SPECIFICATION RESPONSIBILITIES	
Gen. Note	**Specifications are included on the Drawings**
Division 03	Concrete
Division 04	Masonry
Division 05	Metals
Division 07	Thermal Moistures
Division 08	Openings
Division 09	Finishes
Division 10	Specialties
~~Division 31~~	~~Earthwork~~
~~Division 32~~	~~Exterior Improvements~~

The **Signage** Subcontractor shall be responsible for complying with the requirements of each Scope of Work Description / Clarification Section listed below, **even if** those requirements are not shown within the Specification Sections listed above.

This Subcontractor shall be responsible for all Primary Specification Responsibilities identified above in their entirety. All costs associated with Primary Specification Responsibilities shall be included in this Subcontractor's Scope of Work and reflected in bid amount.

This Subcontractor shall be at least partially responsible for Secondary Specification Responsibilities identified above. The Secondary Specifications identify work scopes for which this Subcontractor is not wholly responsible but shall be applicable as it relates to the execution of Primary Specification Responsibilities. This may include a varying degree of responsibility from simple coordination to performing entire portions of work. The Secondary Specifications are not intended to be all inclusive and shall not limit the Subcontractor in any way with regards to installation of work identified in Primary Specification Responsibilities.

The **Signsage and Accessories** Subcontractor is responsible for all Work described herein and below unless specifically noted otherwise to be part of another Subcontractor's Scope of Work. If for some reason an item of scope is included inadvertently in this scope of work and another trade package scope of work, this Subcontractor shall be responsible for including the subject scope of work within its base bid proposal regardless.

10.0 SignsSPECIALTIES AND ACCESSORIES SCOPE OF WORK DESCRIPTION

10.0.1 This Subcontractor shall furnish all labor, materials, equipment, tools, taxes, lifting and hoisting, insurance, supervision, and any other incidentals necessary to provide a complete Specialties Signs and Accessories scopeAccessories scope of work. This contractor shall be responsible for all interior & exterior signage, dimensional characters, accessories, and cast-metal plaquescards as specified in

the contract documents, required by Authorities Having Jurisdiction, and as noted herein. The following scope items are not intended to be all-inclusive but are merely used to highlight some of the major scope items.

10.0.2 This Subcontractor shall coordinate with the Masonry, Siding, Finishes, Openings, and General Contractor to ensure the scope of work aligns with the contract documents. This Subcontractor shall provide all shop drawings and submittals as per the contract documents.

~~10.0.1~~

~~10.0.2 Owner Provided, Contractor Installed Items – This Subcontractor shall **install** all items covered under this Scope and noted in the Contract Documents as Owner Provided, Contractor Installed.~~

—OTHER SCHEDULE SUMMARY INFORMATION—

The Substantial Completion date for the Signage Subcontractor is as reflected within the Construction Schedule. Special attention should be directed to the Construction Schedule for project sequencing requirements which are a requirement of this Scope of Work. Reference Schedule Milestone Table extracted from the Project Schedule below for other specifics related to this Scope of Work.

END OF SECTION
TRADE PACKAGE SCOPE OF WORK:
10B SIGNAGE SUBCONTRACT

TRADE PACKAGE SCOPE OF WORK

10G Awnings & ~~/~~Canopies SUBCONTRACT

Furnish all labor, materials, tools, taxes, safety, insurances, equipment, hoisting, cranes, supervision, and all other incidentals necessary to accomplish all **Awning & ~~/~~Canopies** Work in accordance with all Contract Documents and as defined within **Trade Package General Scope Requirements** and this Scope of Work.

Subcontractors/Suppliers performing work on multiple portions of the project site (i.e., buildings, parking area, site, etc.) shall provide separate equipment, hoisting, cranes, supervision including, but not limited to management, superintendent, foreman, tradesman, laborers, etc. for each portion unless agreed to otherwise in writing by the General Contractor. If the project needs and schedule are not being met to the satisfaction of the General Contractor, written approval will be rescinded, and the original staffing requirements shall be provided by the Subcontractor.

Project Specifications for the **Awning & ~~/~~Canopies** Scope of Work are listed below. This Subcontractor or Supplier shall carefully examine all specification sections and drawings within the Contract Documents and be responsible for all work described within this Scope of Work and as required on the project.

PROJECT SPECIFICATIONS

This Subcontractor is responsible for all Division 01 - General Requirements as listed below prepared by the Architect, Design Consultants, and/or General Contractor or as designated elsewhere within the Technical Specifications or Drawings as applicable to this Trade Package Scope of Work.

DIVISION 01 – GENERAL REQUIRMENTS	
GC Req.	General Requirements Manual
GC Req.	Trade Package Scope Manual
GC Req.	Trae Package General Scope Requirements
Division 01	All Division 01 Specification as Required by Samet Corporation

Primary Responsibility

This Subcontractor is responsible for all Primary Specification Responsibilities listed below unless this Scope of Work specifically states otherwise.

PRIMARY TECHNICAL SPECIFICATION RESPONSIBILITIES (PROJECT MANUAL)	
Gen. Note	**Specifications are included on the Drawings**

Secondary Responsibility

This Subcontractor is responsible for all Secondary Specification Responsibilities listed below to the extent applicable, or defined, within this Scope of Work.

SECONDARY TECHNICAL SPECIFICATION RESPONSIBILITIES

Gen. Note	Specifications are included on the Drawings
~~Div. 31~~	~~Sitework~~
Division 03	Concrete
Division 04	Masonry
Division 05	Metals
Division 07	Thermal Moistures
Division 08	Openings
Division 09	Finishes

The **Awning/Canopies** Subcontractor shall be responsible for complying with the requirements of each Scope of Work Description / Clarification Section listed below, **even if** those requirements are not shown within the Specification Sections listed above.

This Subcontractor shall be responsible for all Primary Specification Responsibilities identified above in their entirety. All costs associated with Primary Specification Responsibilities shall be included in this Subcontractor's Scope of Work and reflected in bid amount.

This Subcontractor shall be at least partially responsible for Secondary Specification Responsibilities identified above. The Secondary Specifications identify work scopes for which this Subcontractor is not wholly responsible but shall be applicable as it relates to the execution of Primary Specification Responsibilities. This may include a varying degree of responsibility from simple coordination to performing entire portions of work. The Secondary Specifications are not intended to be all inclusive and shall not limit the Subcontractor in any way with regards to installation of work identified in Primary Specification Responsibilities.

The **Awning/Canopies** Subcontractor is responsible for all Work described herein and below unless specifically noted otherwise to be part of another Subcontractor's Scope of Work. If for some reason an item of scope is included inadvertently in this scope of work and another trade package scope of work, this Subcontractor shall be responsible for including the subject scope of work within its base bid proposal regardless.

~~32.0~~ 10.0 AWNING/CANOPIES SCOPE OF WORK

10.0.1 This Subcontractor shall furnish all labor, materials, tools, taxes, insurance, equipment, cartage, hoisting, English speaking supervision, temporary utilities, and any other incidentals necessary to provide a complete "Turn-Key" Awning & Canopies trade package scope in accordance with all for construction drawings and specifications which includes, but is not be limited to; providing a "Turn-Key" supply/install of all Five (5) prefabricated canopies where noted within Contract Documents. This Subcontractor is responsible for all hangers, associated mounting hardware, hanger rods, gutter/fascia, fascia extenders, soffit pans, deck pans, fasteners, thru bolts, plates, fasteners, nuts, washers, scupper drainage, exterior grade standard color per contract documents (Reference Drawing 5.10, MP-1 Color Slate Gray), touch-up paint, caulking/sealants, standard color charts for final color selection by Design Team.

10.0.2 All sales tax, business license fees, permit and permit application fees, freight costs, travel fees, standard manufacturer finish warranties, subcontractor workmanship warranties, and all other miscellaneous charges associated with this scope of work are included herein.

10.0.3 Subcontractor shall perform all field engineering, layout, testing, confirmation of field conditions, tolerances, and surveying required for proper completion of all contracted scope of work.

10.0.4 Subcontractor is responsible for providing all compatibility tests for materials being caulked/sealed and/or painted as part of this scope by this Subcontractor. Cost for any specified caulking/sealant material utilized is included within Subcontract.

10.0.5 Subcontractor includes all submittals, shop drawings, color charts, engineering & samples required and/or necessary to coordinate its work with other trades. It should be noted that any errors or omissions in shop drawings/paint color/finish schedules/load calculation submittals causing them not to comply with the overall intent of the architect or engineer design documents does not relieve subcontractor from providing & installing any deficient parts or materials. Subcontractor shall provide manufacturer color sample templates/charts that are in-line with Finish Schedules per the Contract Documents for approval by the Design Team and Owner as part of the formal submittal review process.

10.0.6 This subcontractor shall install all materials in strict accordance with the manufacturer's printed directions, specifications and/or recommendations for installation of highest quality. All working parts shall be properly adjusted after installation and left in new working order.

10.0.7 All hoisting, lift equipment, rigging, cranes, and scaffolding material and necessary manpower to complete this scope of work is to be provided by this Subcontractor. For all Cranes, Scissor Lifts, Aerial Lifts, and Aerial Work Platforms of any kind, wheel booties or non-marking tires and diapers are required to be utilized, to protect slab on grade when operating on slab on grade surface.

—OTHER SCHEDULE SUMMARY INFORMATION—

The Substantial Completion date for the Signage Subcontractor is as reflected within the Construction Schedule. Special attention should be directed to the Construction Schedule for project sequencing requirements which are a requirement of this Scope of Work. Reference Schedule Milestone Table extracted from the Project Schedule below for other specifics related to this Scope of Work.

END OF SECTION
TRADE PACKAGE SCOPE OF WORK:
10G AWNING/CANOPIES SUBCONTRACT

TRADE PACKAGE SCOPE OF WORK

10K Fire Protection Specialties

Furnish all labor, materials, tools, taxes, safety, insurances, equipment, hoisting, cranes, supervision, and all other incidentals necessary to accomplish all **Fire Protection Specialties** Work in accordance with all Contract Documents and as defined within **Trade Package General Scope Requirements** and this Scope of Work.

Subcontractors/Suppliers performing work on multiple portions of the project site (i.e., buildings, parking area, site, etc.) shall provide separate equipment, hoisting, cranes, supervision including, but not limited to management, superintendent, foreman, tradesman, laborers, etc. for each portion unless agreed to otherwise in writing by the General Contractor. If the project needs and schedule are not being met to the satisfaction of the General Contractor, written approval will be rescinded, and the original staffing requirements shall be provided by the Subcontractor.

Project Specifications for the Appliance Scope of Work are listed below. This Subcontractor or Supplier shall carefully examine all specification sections and drawings within the Contract Documents and be responsible for all work described within this Scope of Work and as required on the project.

PROJECT SPECIFICATIONS

This Subcontractor is responsible for all Division 1 - General Requirements as listed below prepared by the Architect, Design Consultants, and/or General Contractor or as designated elsewhere within the Technical Specifications or Drawings as applicable to this Trade Package Scope of Work.

DIVISION 01 – GENERAL REQUIRMENTS	
GC Req.	General Requirements Manual
GC Req.	Trade Package Scope Manual
GC Req.	Trae Package General Scope Requirements
Division 01	All Division 01 Specification as Required by Samet Corporation

Primary Responsibility

This Subcontractor is responsible for all Primary Specification Responsibilities listed below unless this Scope of Work specifically states otherwise.

PRIMARY TECHNICAL SPECIFICATION RESPONSIBILITIES (PROJECT MANUAL)	
Gen. Note	**Specifications are included on the Drawings**
104414~~010 00 00~~	Fire Protection Specialties

Secondary Responsibility

This Subcontractor is responsible for all Secondary Specification Responsibilities listed below to the extent applicable, or defined, within this Scope of Work.

SECONDARY TECHNICAL SPECIFICATION RESPONSIBILITIES	
Gen. Note	**Specifications are included on the Drawings**
Division 04	Masonry
Division 05	Metals
Division 06	Millwork
Division 07	Siding
Division 09	Finishes
Division 10	Specialties & Accessories
Division 12	Furnishings

The Subcontractor shall be responsible for complying with the requirements of each Scope of Work Description **even if** those requirements are not shown within the Specification Sections listed above.

This Subcontractor shall be responsible for all Primary Specification Responsibilities identified above in their entirety. All costs associated with Primary Specification Responsibilities shall be included in this Subcontractor's Scope of Work and reflected in bid amount.

This Subcontractor shall be at least partially responsible for Secondary Specification Responsibilities identified above. The Secondary Specifications identify work scopes for which this Subcontractor is not wholly responsible but shall be applicable as it relates to the execution of Primary Specification Responsibilities. This may include a varying degree of responsibility from simple coordination to performing entire portions of work. The Secondary Specifications are not intended to be all inclusive and shall not limit the Subcontractor in any way with regards to installation of work identified in Primary Specification Responsibilities.

10.0 FIRE PROTECTION SPECIALTIES

10.1.0 This Subcontractor is responsible for providing all necessary labor and materials such as but not limited to: Portable Fire Extinguishers, Fire Protection Cabinets, Mounting Brackets, Finishes, and all Accessories required to provide a complete scope of work per the contract documents.

10.1.1 This Subcontractor shall only provide approved materials referenced in the project documents.

10.1.2 This Subcontractor shall coordinate with any necessary contractors to ensure the finished product or finished scope of work algins with the project documents. This Subcontractor shall provide Shop Drawings, Coordination Drawings, and Rough Opening Dimensions.

10.1.3 This Subcontractor shall provide the General Contractor and the Owner with the necessary warranty documentation per the contract documents.

OTHER SCHEDULE SUMMARY INFORMATION—

The Substantial Completion date for the Fire Protection Specialties Subcontractor is as reflected within the Construction Schedule. Special attention should be directed to the Construction Schedule for project sequencing requirements which are a requirement of this Scope of Work.

END OF SECTION
TRADE PACKAGE SCOPE OF WORK:
010A FIRE PROTECTION SPECIALTIES SUBCONTRACT

TRADE PACKAGE SCOPE OF WORK

12A WINDOW TREATMENT SUBCONTRACT

Furnish all labor, materials, tools, taxes, safety, insurances, equipment, hoisting, cranes, supervision, and all other incidentals necessary to accomplish all **Window Treatments** Work in accordance with all Contract Documents and as defined within **Trade Package General Scope Requirements** and this Scope of Work.

Subcontractors/Suppliers performing work on multiple portions of the project site (i.e., buildings, parking area, site, etc.) shall provide separate equipment, hoisting, cranes, supervision including, but not limited to management, superintendent, foreman, tradesman, laborers, etc. for each portion unless agreed to otherwise in writing by the General Contractor. If the project needs and schedule are not being met to the satisfaction of the General Contractor, written approval will be rescinded, and the original staffing requirements shall be provided by the Subcontractor.

Project Specifications for the **Window Treatments** Scope of Work are listed below. This Subcontractor or Supplier shall carefully examine all specification sections and drawings within the Contract Documents and be responsible for all work described within this Scope of Work and as required on the project.

PROJECT SPECIFICATIONS

This Subcontractor is responsible for all Division 01 - General Requirements as listed below prepared by the Architect, Design Consultants, and/or General Contractor or as designated elsewhere within the Technical Specifications or Drawings as applicable to this Trade Package Scope of Work.

DIVISION 01 – GENERAL REQUIRMENTS	
GC Req.	General Requirements Manual
GC Req.	Trade Package Scope Manual
GC Req.	Trae Package General Scope Requirements
Division 01	All Division 01 Specification as Required by Samet Corporation

Primary Responsibility

This Subcontractor is responsible for all Primary Specification Responsibilities listed below unless this Scope of Work specifically states otherwise.

PRIMARY TECHNICAL SPECIFICATION RESPONSIBILITIES (PROJECT MANUAL)	
Gen. Note	**Specifications are included on the Drawings**
12-21-13	Horizontal Aluminum Blinds
12-24-13	Roller Window Shades

Secondary Responsibility

This Subcontractor is responsible for all Secondary Specification Responsibilities listed below to the extent applicable, or defined, within this Scope of Work.

SECONDARY TECHNICAL SPECIFICATION RESPONSIBILITIES	
Gen. Note	**Specifications are included on the Drawings**
Division 04	Masonry
Division 05	Metals
Division 06	Woods, Plastics, and Composites
Division 08	Openings
Division 09	Finishes

The **Window Treatments** Subcontractor shall be responsible for complying with the requirements of each Scope of Work Description / Clarification Section listed below, **even if** those requirements are not shown within the Specification Sections listed above.

This Subcontractor shall be responsible for all Primary Specification Responsibilities identified above in their entirety. All costs associated with Primary Specification Responsibilities shall be included in this Subcontractor's Scope of Work and reflected in bid amount.

This Subcontractor shall be at least partially responsible for Secondary Specification Responsibilities identified above. The Secondary Specifications identify work scopes for which this Subcontractor is not wholly responsible but shall be applicable as it relates to the execution of Primary Specification Responsibilities. This may include a varying degree of responsibility from simple coordination to performing entire portions of work. The Secondary Specifications are not intended to be all inclusive and shall not limit the Subcontractor in any way with regards to installation of work identified in Primary Specification Responsibilities.

The **Window Treatments** Subcontractor is responsible for all Work described herein and below unless specifically noted otherwise to be part of another Subcontractor's Scope of Work. If for some reason an item of scope is included inadvertently in this scope of work and another trade package scope of work, this Subcontractor shall be responsible for including the subject scope of work within its base bid proposal regardless.

~~**12.0 FLAG POLES SCOPE OF WORK**~~

~~12.1 This Subcontractor shall furnish and install Horizontal Aluminum Blinds & Roller Window Shades in accordance with the contract documents.~~

12.0 Window Treatment Scope of Work

12.1 This Subcontractor shall coordinate with the interior finishes contractor, masonry contractor, siding contractor, and metals contractor as well as the General Contractor to ensure finish product complies with

each system and the contract documents. This Subcontractor is responsible for all field measuring of existing conditions prior to fabrication and install.

12.2 This Subcontractor shall provide all necessary labor and materials to install all horizontal aluminum blinds and roller window shades per the contract documents.

—OTHER SCHEDULE SUMMARY INFORMATION—

The Substantial Completion date for the Signage Subcontractor is as reflected within the Construction Schedule. Special attention should be directed to the Construction Schedule for project sequencing requirements which are a requirement of this Scope of Work. Reference Schedule Milestone Table extracted from the Project Schedule below for other specifics related to this Scope of Work.

END OF SECTION
TRADE PACKAGE SCOPE OF WORK:
12A WINDOW TREATMENTS SUBCONTRACT

TRADE PACKAGE SCOPE OF WORK

21A - FIRE SUPPRESSION SUBCONTRACT

Furnish all labor, materials, tools, taxes, safety, insurances, equipment, hoisting, cranes, supervision, and all other incidentals necessary to accomplish all **Fire Suppression** Subcontract Work in accordance with all Contract Documents and as defined within **Trade Package General Scope Requirements** and this Scope of Work.

Subcontractors/Suppliers performing work on multiple portions of the project site (i.e., buildings, parking area, site, etc.) shall provide separate equipment, hoisting, cranes, full-time English-speaking supervision including, but not limited to management, superintendent, on site foreman, tradesman, laborers, etc. for each portion unless agreed to otherwise in writing by the General Contractor. If the project needs and schedule are not being met to the satisfaction of the General Contractor, written approval will be rescinded, and the original staffing requirements shall be provided by the Subcontractor.

Project Specifications for the **Fire Suppression** Scope of Work are listed below. This Subcontractor or Supplier shall carefully examine all specification sections and drawings within the Contract Documents and be responsible for all work described within this Scope of Work and as required on the project.

PROJECT SPECIFICATIONS

This Subcontractor is responsible for all Division 1 - General Requirements prepared by the Architect, Design Consultants, and/or General Contractor or as designated elsewhere within the Technical Specifications or Drawings as applicable to this Trade Package Scope of Work.

DIVISION 01 – GENERAL REQUIRMENTS	
GC Req.	General Requirements Manual
GC Req.	Trade Package Scope Manual
GC Req.	Trae Package General Scope Requirements
Division 01	All Division 01 Specification as Required by Samet Corporation

Primary Responsibility

This Subcontractor is responsible for all Primary Specification Responsibilities listed below unless this Scope of Work specifically states otherwise.

PRIMARY TECHNICAL SPECIFICATION RESPONSIBILITIES (PROJECT MANUAL)	
	Specifications are included on the Drawings
21 05 00~~17~~	Common Work Results for Fire Suppression ~~Sleeves and Sleeve Seals for Fire-Suppression Piping~~
21 0518	Escutcheons for Fire-Suppression Piping General
21 0523	General-Duty Valves for Fire Protection Piping
21 0529	Hangers and Supports for Fire-Suppression Piping and Equipment
21 0553	Identification for Fire-Suppression Piping and Equipment
21 1000	Facility Fire-Suppression Water-Service Piping

21-1313	Wet-Pipe Sprinkler Systems

Secondary Responsibility

This Subcontractor is responsible for all Secondary Specification Responsibilities listed below to the extent applicable, or defined, within this Scope of Work.

SECONDARY TECHNICAL SPECIFICATION RESPONSIBILITIES	
	Specifications are included on the Drawings
Gen. Note	**This Subcontractor is responsible for complete Specifications package as it relates to the Fire Protection Scope of Work.**
Division 04	Masonry
Division 05	Metals
Division 07	Thermal and Moisture Protection
Division 09	Finishes
Division 21	Fire Suppression
Division 22	Plumbing
Division 23	Heating, Ventilating, and Air Conditioning (HVAC)
Division 26	Electrical
Division 27	Communications
Division 28	Electronic Safety and Security
Division 33	Utilities

The **Fire Suppression** Subcontractor shall be responsible for complying with the requirements of each Scope of Work Description / Clarification Section listed below, **even if** those requirements are not shown within the Specification Sections listed above.

This Subcontractor shall be responsible for all Primary Specification Responsibilities identified above in their entirety. All costs associated with Primary Specification Responsibilities shall be included in this Subcontractor's Scope of Work and reflected in bid amount.

This Subcontractor shall be at least partially responsible for Secondary Specification Responsibilities identified above. The Secondary Specifications identify work scopes for which this Subcontractor is not wholly responsible but shall be applicable as it relates to the execution of Primary Specification Responsibilities. This may include a varying degree of responsibility from simple coordination to performing entire portions of work. The Secondary Specifications are not intended to be all inclusive and shall not limit the Subcontractor in any way with regards to installation of work identified in Primary Specification Responsibilities.

The **Fire Suppression** Subcontractor is responsible for all Work described herein and below unless specifically noted otherwise to be part of another Subcontractor's Scope of Work.

Prior to commencing with the installation of any work, this Subcontractor shall field verify and provide the General Contractor with written confirmation that all areas scheduled to receive the materials provided as

part of this Scope of Work are in a condition acceptable to this Subcontractor. Failure to notify the General Contractor in writing of such acceptance prior to commencing any work shall constitute this Subcontractor's acceptance of the applicable areas.

The drawings, details and specifications do not necessarily indicate or describe all work required for the full performance and completion of the requirements of the Contract Documents. This Subcontractor shall use all reasonable care to include those items necessary and/or implied to fill foreseeable gaps, omissions or conflicts that prevent a complete and functioning system even though it may not be detailed.

Provide all shop drawings, stamped drawings, calculations, submittals, samples, mock-ups, certificates, qualifications, etc. as required for approval by Architect/Engineer, and/or local governing authorities in a timely manner to avoid delaying the project.

3.0 CONCRETE SCOPE OF WORK DESCRIPTION

3.0.1 Subcontractor shall coordinate any concrete or masonry penetrations and is responsible for all sleeving/conduit material for operations within its scope of work. Shall the Subcontractor fail to coordinate prior to masonry wall construction it will be the responsibility of this Subcontractor to provide means for proper routing of piping, conduit, or systems per the contract documents at no additional expense to the Contractor. Any penetrations after-the-fact will require coordination with the Contractor and written approval from the Structural Engineer of Record and applicable Subcontractor prior to any cutting, coring, or drilling.

3.0.2 Subcontractor shall furnish, layout, and install all UL listed sleeving at steel decking, CMU walls, shaft walls, etc. for this scope of work. All sleeving materials to be approved prior to procurement and install.

5.0 STRUCTURAL STEEL SCOPE OF WORK DESCRIPTION

5.0.1 Provide a to scale drawing providing dimensioned sizes and locations for all decking openings requiring miscellaneous framed openings during submittals for review and use by other trades as necessary.

5.0.2 Coordinate all routing, required clearances, and openings for this scope of work with the Structural Steel Subcontractor and General Contractor to ensure required clearances are incorporated into Structural Steel design and shop drawings.

5.0.3 Provide scaled drawings providing dimensioned sizes and locations for all openings requiring miscellaneous framed rough openings. Subcontractor shall identify conflicts with structural and light gauge steel and communicate required openings and/or clearances. Provide these drawings and dimensions in a timely manner that will not slow the flow of submittals and production of structural steel.

5.0.4 All welding shall be performed by welders certified for the procedures used.

6.0 WOOD, PLASTICS, AND COMPOSITES SCOPE OF WORK DESCRIPTION

6.0.1 Wood Blocking – The Fire Suppression Subcontractor shall coordinate all required blocking for this Scope of Work with the General Contractor for install by others.

7.0 THERMAL AND MOISTURE PROTECTION SCOPE OF WORK DESCRIPTION

7.0.1 Firestop Systems – All penetrations through walls, ceilings, and/or floors shall be sealed to meet or exceed the requirements of the Contract Documents and all building codes, fire codes, etc., applicable to this project. Additionally, all penetrations shall be sealed with the required firesafing or firestopping materials to meet or exceed the fire rating requirements of the applicable wall, ceiling, and/or floor assembly as acceptable to the General Contractor, Designer, and governing authorities.

7.0.2 This Subcontractor will complete all penetration firestopping and firesafing for penetrations provided as part of this Scope of Work at all wall, floor, and ceiling types. Subcontractor penetrating masonry partitions shall provide properly sized sleeves or core drill penetrations within all masonry walls. All through slab firestopping and sleeves are by the Subcontractor requiring the penetration.

7.0.3 The installing Subcontractor must provide UL approved details for each firestopping condition. If among the specified firestop manufacturers, no approved firestop assembly exists for non-standard openings in need of firestopping, mock-ups may be required for any proposed engineering judgment designs for approval by the General Contractor, the Architect, the Owner and/or the authority having jurisdiction prior to final firestop installation. Accepted in-place mock-ups will be accepted as final work. All engineering judgements must be sealed by licensed North Carolina engineer provided by the installing Subcontractor.

7.0.4 Firestopping installers must provide proof of Factory Mutual Firm 4991 certification and approval. Work must be performed by installer who must provide evidence that they have been trained and achieved a passing score in a competency-based testing by the manufacturer whose products will be installed. All firestopping materials will be supplied by only one of the specified manufacturers. Mixing manufacturers materials will not be permitted. All subcontractors are required to use the same firestopping manufacturer. This Subcontractor shall coordinate with the Drywall, Framing, and Insulation Subcontractor and other MEP trades to ensure a single source manufactured product is used for firestopping activities.

7.0.5 Joint Sealants - This Work shall include a complete Joint Sealant System, including but not limited to, all specified warranties, elastomeric joint sealants, solvent-release-curing joint sealants, latex joint sealants, miscellaneous joint sealants, backing, primer, cleaners, bond breaker tape, masking tape, accessory materials, etc. Include tooling, cleaning, and protection of all sealant joints.

7.0.6 Subcontractor shall be responsible for properly flashing all exterior penetrations made for installation of this scope of work, per the contract documents.

9.0 INTERIOR FINISHES SCOPE OF WORK DESCRIPTION

9.0.1 Subcontractor shall be responsible for any associated costs with cutting, patching, and replacement of finishes due to any repairs, errors, or omissions due to the fault of this Subcontractor. Subcontractor shall be responsible for proof of damage by others that results in cutting, patching, and replacement of finishes.

21.0 FIRE SUPPRESSION SCOPE OF WORK DESCRIPTION

21.0.1 Fire Suppression System – This Work shall include providing a complete turnkey Fire Suppression System including all design, fabrication, and install as stated within this scope of work and the contract documents.

21.0.2 Fire Suppression Supporting Devices - This Work shall include providing all Fire Suppression related supporting devices, including but not limited to, metal pipe hangers and supports, trapeze pipe hangers, metal framing system, thermal hanger-shield inserts, fastener systems, equipment supports, miscellaneous structural steel supports and/or angle frame supports, etc. per the contract documents.

21.0.3 Codes, Permits and Inspection - All fire suppression work shall meet or exceed all applicable code requirements. Subcontractor shall obtain and pay for all necessary permits, design review fees, and inspections associated with this scope of work.

21.0.4 Wet Pipe Automatic Sprinkler System - This Work shall include a complete Wet Pipe Automatic Sprinkler System for all areas designated within the buildings, including but not limited to, submittal of Sprinkler System shop drawings, calculations, product data, etc. to the State/Local Fire Marshal, local authorities, Owner's insurance company and Designer for review and compliance with NFPA 13 and associated codes/regulations. Subcontractor shall furnish and install the associated piping, risers, fittings, quick response sprinklers, sprinkler heads, sprinkler head cabinets, water flow indicators, tamper switches, fire department connections, inspector's test connections, mechanical valves, gate valves, drain valves, OS&Y valves, check valves, control valves, relief valves, electric alarm bell, etc. in accordance with NFPA, AHJ, and the contract documents.

21.0.5 Fire Suppression System Identification – This Work includes all necessary equipment labels, warning signs and labels, stencils, valve tags, warning tags, signage, etc. per the contract documents and AHJ. Subcontractor shall provide and install all applicable signage indicating the purpose of each control valve, FDC, test connection, main and auxiliary drain, etc., as well as any other signage directly related to the fire sprinkler scope of work and as required by NFPA, contract documents, and the authorities having jurisdiction. This Subcontractor is responsible for providing any and all signage required to be considered in compliance with all local, state, and federal regulations and codes.

21.0.6 Subcontractor shall provide complete shop drawings to General Contractor. The Subcontractor hereby agrees the fire sprinkler permit will be received within sixty (60) days of the contract being

executed. The engineered design shall be reviewed by the architect, engineer, authority having jurisdiction, and the Owner's insurance company for compliance.

21.0.7 Subcontractor shall provide adequate fire suppression system shop drawings for a wet pipe automatic sprinkler system accounting for all required areas of the building. The Subcontractor agrees the design shall meet all contract document requirements, as well as any associated local, state, and federal regulations and/or codes. Should it be determined that the initial design does not adequately meet these requirements, the Subcontractor shall be responsible for revising the design and fulfilling its scope of work at no additional cost to the Contractor.

21.0.8 Coordination with applicable code/regulatory agencies throughout the review and approval of the shop drawings for this Scope of Work is required.

21.0.9 This scope of work begins one foot (1') above finish floor elevation in the Sprinkler Riser Room as required by NFPA, authority having jurisdiction, and the contract documents.

21.0.10 This subcontractor shall coordinate with the Fire Alarm / Electrical subcontractor for the location and monitoring requirements for the Fire Suppression scope of work. Final fire alarm connections shall be provided by the Fire Alarm / Electrical subcontractor.

21.0.11 This subcontractor shall provide and install prefabricated fire pump house and all connections as well as adequate shop drawings stated within the contract documents and specification. Coordinate with Sitework contractor for location.

21.0.12 Subcontractor shall provide and install all required drains and connections, terminated and ready for use, per the contract documents.

21.0.13 Subcontractor shall coordinate points where the fire suppression system drains shall be carefully coordinated with the General Contractor to ensure they drain in acceptable locations.

21.0.14 Subcontractor shall provide and install all piping in sizes required by NFPA, but in no case less than the sizes or material shown in the contract documents and/or the reviewed/returned shop drawings and design submittals. The Subcontractor hereby agrees that piping and fittings will be utilized as applicable per NFPA.

21.0.15 Subcontractor shall provide and install all specialty heads, shutoff valves with tamper switches, etc. on sprinkler pipes serving special use areas, such as shafts, pits, machine rooms, etc. as required by local code, authority having jurisdiction, and the contract documents.

21.0.16 Subcontractor shall provide and install all building interior backflow preventers (non-metered), check valves, double-check valves, control valves, butterfly valves, gate valves, tamper switches, flow switches, and Siamese connection devices as required. This Subcontractor agrees that this also includes providing a backflow preventer permit(s) prior to beginning installation of the backflow preventers. The backflow preventer shall be in accordance with the utility company regulations.

Subcontractor has excluded exterior backflow preventers.

21.0.17 Sprinkler piping configuration and layout shall be routed to minimize conflicts with HVAC, Plumbing, and Electrical components and equipment. Sprinkler head layout shall be per RCP, symmetrical with room size and configuration and light fixture pattern and shall be located so conflicts are avoided. Locate sprinkler heads in center of modular tile or in other symmetrical pattern acceptable to the Designer as designated per the contract documents.

21.0.18 Provide flex whip drops at all lay in acoustical ceilings.

21.0.19 Provide sprinkler heads centered in both directions of acoustical tile. Final adjustment of head locations will commence after the ceiling grid is installed.

21.0.20 This trade shall carefully examine the contract documents in their entirety for this project. No allowance will be made for lack of knowledge of sprinkler work required in coordination with HVAC, Plumbing, Electrical, and other trades, including Owner furnished equipment.

21.0.21 Provide all testing for a complete and acceptable fire suppression system as required by the contract documents and governing authorities.

21.0.22 The design, installation, and proper operation of this system are the responsibility of the Fire Suppression Subcontractor. Fire Suppression Subcontractor is to obtain all necessary approvals for this phase of work including insurance underwriters, governmental agencies, or other authorities as may be required. Subcontractor warrants that system design and installation is in accordance with all codes, industry standards, and good engineering practice.

21.0.23 The Fire Protection Subcontractor shall schedule, with applicable Local and State officials and/or agencies, a final inspection of the Wet Pipe Suppression Sprinkler System, no later than two (2) weeks prior to the time the system is scheduled to be placed into operation. A Contractor's Material & Test Certificate shall be provided to General Contractor upon successfully completing a system test.

21.0.24 Furnish and install all tamper switches, and flow switches required for the Fire Suppression System at building and site utilities.

21.0.25 The Subcontractor shall include all pre-testing and testing requirements needed to achieve temporary and permanent certificates of occupancy, Beneficial Occupancy and Final Acceptance per the Project Construction Schedule.

21.0.26 This Subcontractor is aware of the structural components of the building and has taken this into consideration for layout and location of penetrations. This subcontractor shall coordinate its design and install with all other trades, specifically to include mechanical, plumbing, electrical, structural steel, concrete, etc. to ensure compliance per NFPA 13 and loading for the fire suppression system are accounted for in both design and install.

21.0.27 Subcontractor shall coordinate any rated partition, steel, concrete, or masonry penetrations and is responsible for all sleeving material for operations within its scope of work. Shall the Subcontractor fail to coordinate prior to execution of work by others, it will be the responsibility of this Subcontractor to provide means for proper routing of pipe per the contract documents at no additional expense to the General Contractor. Any penetrations after-the-fact will require coordination with the General Contractor and written approval from the associated design professional prior to any cutting, coring, or drilling.

21.0.28 Furnish labor and coordination for final fire marshal review and inspection after completion of work. No additional charges will be accepted for mobilizations for these final reviews.

21.0.29 This Subcontractor shall provide PVC Tube mounted adjacent to the riser containing the sprinkler system shop drawings. Provide permanent type charts framed under glass and mounted in accordance with the contract documents or as directed by governing authorities.

21.0.30 This Subcontractor is to meet with and coordinate with the Electrical Subcontractor, Plumbing Subcontractor, and the HVAC Subcontractor to ensure coordination between subcontractors, including all items whether Electrical, Plumbing, HVAC, or fire suppression related will be provided as needed and that the installation of any items will be completed by one or the other Subcontractors without any additional expense to the General Contractor or Owner.

21.0.31 Concrete housekeeping pads, if required for this work will be provided by the Concrete subcontractor and is not part of this Scope of Work. Subcontractor shall coordinate requirements for this scope of work with the General Contractor.

21.0.32 Threading machines shall be placed outside the building or over sand box to absorb cutting oil on concrete or finished floor. Use of Sand Box will require the General Contractor's Superintendent approval. All inside drain barrels or buckets will have a clean plastic tarp underneath to protect flooring and adjacent surroundings from damage. Any damage or staining of any finish products will be repaired or replaced at this subcontractor's expense.

21.0.33 Subcontractor will coordinate, cooperate, and work with the Fire Alarm Subcontractor throughout the duration of the project. This includes but is not limited to; providing and installing all devices and components (tampers, flow switches, electric bells) for inter-lock wiring with the alarm bell or central station monitoring, as required by the local building official. Electrical wiring shall not be considered part of this scope.

21.0.34 Subcontractor shall coordinate all necessary power requirements with the General Contractor and Electrical Subcontractor.

21.0.35 Subcontractor shall ensure that sprinklers and/or pipe in unheated areas subject to freezing shall be protected from freezing and approved by the authority having jurisdiction. Any pipe insulation must be provided and installed by this Subcontractor.

21.0.36 Ensure that all elements of the system(s) are of sufficient capacity to meet the specified performance requirements, per the contract documents.

21.0.37 Subcontractor shall design the Fire Suppression System and equipment arrangements in a fashion to provide maintenance access and service by grouping and positioning valves and fire alarm connections where possible in accessible locations.

21.0.38 This Subcontractor shall meet and coordinate with the Electrical Subcontractor, HVAC Subcontractor, Plumbing Subcontractor, and the Concrete Foundations Subcontractor to ensure that all underground items and overhead systems are coordinated prior to installation. All systems are to meet code requirements for height/depth, access and service clearances, as well as clearances away from other piping systems or equipment/items provided by other trades, etc. as required by governing authorities. Any additional expenses due to installations that require rework or reinstallation due to this Subcontractor's failure to coordinate or comply with governing authorities' codes and requirements and/or the contract documents shall be the responsibility of this subcontractor.

21.0.39 Subcontractor shall keep and maintain at the jobsite one (1) complete set of Fire Suppression Drawings, which must be used for, the purpose of, recording all changes occurring during the construction of this project. Progress is to be indicated by coloring-in various pipes, ducts, and associated appurtenances exactly as they are erected. These drawings shall be used to produce the final as-built drawings.

21.0.40 Subcontractor shall be responsible for obtaining the necessary fire flow data, GPM and pressure, from the nearest water supply prior to performing hydraulic calculations. The Subcontractor agrees to coordinate with the authority having jurisdiction, General Contractor, and Owner's design team, should it be necessary.

21.0.41 During all commissioning, intermittent and final inspections by local, state or other jurisdictional authorities, this subcontractor shall dedicate necessary personnel, equipment, ladders, sealants, etc. as required to demonstrate the construction of this subcontractor's work and to immediately correct any minor deficiencies of this subcontractor's work as may be noted by the inspecting authority. These personnel shall have no other duties during the inspection.

21.0.42 Furnish spare sprinkler cabinet as specified with spare heads in quantities required by NFPA 13, wrenches for each type of head, etc.; mount cabinet in riser room or as specified by Owner.

21.0.43 Provide all required Owner training on the proper use of system including video taping of training. Provide all operating and maintenance manuals and maintenance services.

21.0.44 Provide all sprinkler head guards where indicated and or required to avoid impact to heads.

21.0.45 This subcontractor shall not be relieved from the responsibility of complying with governing

authorities' requirements for installations within this scope of work. This subcontractor is responsible for any errors and omissions as it relates to this scope of work. This subcontractor shall provide a complete and operable system that is acceptable by the General Contractor, Owner, and adheres to the State, Local, and any other governing authorities' code requirements. Any deviations or noncompliance of these codes and/or requirements will be the sole responsibility of this subcontractor to correct at no expense to the General Contractor and Owner.

—OTHER SCHEDULE SUMMARY INFORMATION—

The Substantial Completion date for the Fire Suppression Subcontractor is as reflected within the Construction Schedule. Special attention should be directed to the Construction Schedule for project sequencing requirements which are a requirement of this Scope of Work.

END OF SECTION
TRADE PACKAGE SCOPE OF WORK:
21A FIRE SUPPRESSION SUBCONTRACT

TRADE PACKAGE SCOPE OF WORK

22A PLUMBING SYSTEMS SUBCONTRACT

Furnish all labor, materials, tools, taxes, safety, insurances, equipment, hoisting, cranes, supervision, and all other incidentals necessary to accomplish all **Plumbing Systems** Subcontract Work in accordance with all Contract Documents and as defined within **Trade Package General Scope Requirements** and this Scope of Work.

Subcontractors/Suppliers performing work on multiple portions of the project site (i.e., buildings, parking area, site, etc.) shall provide separate equipment, hoisting, cranes, full-time English-speaking supervision including, but not limited to management, superintendent, on site foreman, tradesman, laborers, etc. for each portion unless agreed to otherwise in writing by the General Contractor. If the project needs and schedule are not being met to the satisfaction of the General Contractor, written approval will be rescinded, and the original staffing requirements shall be provided by the Subcontractor.

Project Specifications for the **Plumbing Systems** Scope of Work are listed below. This Subcontractor or Supplier shall carefully examine all specification sections and drawings within the Contract Documents and be responsible for all work described within this Scope of Work and as required on the project.

PROJECT SPECIFICATIONS

This Subcontractor is responsible for all Division 1 - General Requirements prepared by the Architect, Design Consultants, and/or General Contractor or as designated elsewhere within the Technical Specifications or Drawings as applicable to this Trade Package Scope of Work.

DIVISION 01 – GENERAL REQUIRMENTS	
GC Req.	General Requirements Manual
GC Req.	Trade Package Scope Manual
GC Req.	Trae Package General Scope Requirements
Division 01	All Division 01 Specification as Required by Samet Corporation

Primary Responsibility
This Subcontractor is responsible for all Primary Specification Responsibilities listed below unless this Scope of Work specifically states otherwise.

PRIMARY TECHNICAL SPECIFICATION RESPONSIBILITIES (PROJECT MANUAL)	
	Specifications are included on the Drawings
~~07 72 00~~	~~Roof Accessories~~
~~07 84 13~~	~~Penetration Firestopping~~
22-0~~5~~0~~-~~00	~~General Plumbing~~ Common Work Results for Plumbing
22-05-~~0~~13	~~Common Motor Requirements for Plumbing Equipment~~ Plumbing Pipe, Tubes, & Fittings
~~22 05 17~~	~~Sleeves and Sleeve Seals for Plumbing Piping~~

~~22 05 18~~	~~Escutcheons for Plumbing Piping~~
22 05 23~~.12~~	~~Ball~~ General Duty Valves for Plumbing Piping
~~22 05 23.14~~	~~Check Valves for Plumbing Piping~~
22 05 29	Hangers and Supports for Plumbing Piping and Equipment
22 05 53	Identification for Plumbing Piping and Equipment
22 07 ~~19~~00	Plumbing ~~Piping~~ Insulation
~~22 08 13~~	~~Commissioning of Plumbing Systems~~
22 11 16	Domestic Water Piping
~~22 11 19~~	~~Domestic Water Piping Specialties~~
~~22 11 23~~	~~Domestic Water Pumps~~
~~22 11 23.21~~	~~Inline, Domestic Water Pumps~~
~~22 11 24~~	~~Facility Natural Gas Piping~~
22 13 16	Sanitary Waste and Vent Piping
~~22 13 19~~	~~Sanitary Waste Piping Specialties~~
~~22 13 19.13~~	~~Sanitary Drains~~
22 13 23	Sanitary Waste Interceptors
231123	Facility Natural Gas Piping
~~22 14 13~~	~~Facility Storm Drainage Piping~~
~~22 14 23~~	~~Storm Drainage Piping Specialties~~
~~22 34 00~~	~~Fuel Fired, Domestic Water Heaters~~
~~22 42 13.13~~	~~Commercial Water Closets~~
~~22 42 13.16~~	~~Commercial Urinals~~
~~22 42 16.13~~	~~Commercial Lavatories~~
~~22 42 16.16~~	~~Commercial Sinks~~
~~22 45 00~~	~~Emergency Plumbing Fixtures~~
~~22 47 16~~	~~Pressure Water Coolers~~

Secondary Responsibility

This Subcontractor is responsible for all Secondary Specification Responsibilities listed below to the extent applicable, or defined, within this Scope of Work.

SECONDARY TECHNICAL SPECIFICATION RESPONSIBILITIES	
	Specifications are included on the Drawings
Gen. Note	**This Subcontractor is responsible for complete Specifications package as it relates to the Plumbing Systems Scope of Work.**
Division 03	Concrete
Division 04	Masonry
Division 05	Metals
Division 06	Wood, Plastics, and Composites
Division 07	Thermal and Moisture Protection
Division 09	Finishes
Division 10	Residential Appliances
Division 21	Fire Suppression

~~Division 22~~	~~Plumbing~~
Division 23	~~Heating, Ventilating, and Air Conditioning (HVAC)~~ Mechanical
Division 26	Electrical
Division 27	Communications
Division 28	Electronic Safety ~~and Security~~
Division 33	Utilities

The **Plumbing Systems** Subcontractor shall be responsible for complying with the requirements of each Scope of Work Description / Clarification Section listed below, **even if** those requirements are not shown within the Specification Sections listed above.

This Subcontractor shall be responsible for all Primary Specification Responsibilities identified above in their entirety. All costs associated with Primary Specification Responsibilities shall be included in this Subcontractor's Scope of Work and reflected in bid amount.

This Subcontractor shall be at least partially responsible for Secondary Specification Responsibilities identified above. The Secondary Specifications identify work scopes for which this Subcontractor is not wholly responsible but shall be applicable as it relates to the execution of Primary Specification Responsibilities. This may include a varying degree of responsibility from simple coordination to performing entire portions of work. The Secondary Specifications are not intended to be all inclusive and shall not limit the Subcontractor in any way with regards to installation of work identified in Primary Specification Responsibilities.

The **PLUMBING SYSTEMS** Subcontractor is responsible for all Work described herein and below unless specifically noted otherwise to be part of another Subcontractor's Scope of Work.

Prior to commencing with the installation of any work, this Subcontractor shall field verify and provide the General Contractor with written confirmation that all areas scheduled to receive the materials provided as part of this Scope of Work are in a condition acceptable to this Subcontractor. Failure to notify the General Contractor in writing of such acceptance prior to commencing any work shall constitute this Subcontractor's acceptance of the applicable areas.

The drawings, details and specifications do not necessarily indicate or describe all work required for the full performance and completion of the requirements of the Contract Documents. This Subcontractor shall use all reasonable care to include those items necessary and/or implied to fill foreseeable gaps, omissions or conflicts that prevent a complete and functioning system even though it may not be detailed.

Provide all shop drawings, stamped drawings, calculations, submittals, samples, mock-ups, certificates, qualifications, etc. as required for approval by Architect/Engineer, and/or local governing authorities in a timely manner to avoid delaying the project.

~~See below for all safety submittals required throughout the duration of the project:~~

3.0 CONCRETE SCOPE OF WORK DESCRIPTION

3.0.1 Cast-In-Place Concrete - This Work shall include the providing of all interior and exterior cast-in-place concrete necessary for work provided as part of this Scope of Work, including but shall not be limited to, clean out concrete encasements, trough drain infill, etc. and any other concrete that may be required during placement of work below grade. Equipment Pads clearly defined on the contract documents and communicated by this Subcontractor will be provided by the Concrete Foundations, Walls, & Slabs Subcontractor. This Subcontractor shall be responsible for coordination and layout of the equipment pads. Pads not communicated and coordinated with the General Contractor shall be provided by the Plumbing Subcontractor.

3.0.2 Concrete Block Outs - Unless noted otherwise, miscellaneous slab on grade block outs, etc. shall be located, furnished, installed, and removed by the Subcontractor requiring a specific slab on grade block out, etc. This Work shall include close coordination, where required, to install plumbing, mechanical, fire protection, and electrical equipment furnished and installed by the respective Trade Subcontractors.

3.0.3 Unless specifically noted otherwise within a Trade Package Scope of Work, all sleeves, conduit, boxes, block outs, or embeds set or cast into concrete, masonry or other work shall be furnished and installed by the Subcontractor requiring these items to complete the installation of its respective work. The set items must be secured in place to prevent movement during the proceeding activity. Additionally, these items shall be provided in a timely manner so as not to delay the concrete, masonry, or other work. In the event the Subcontractor requiring the sleeve(s) or embed(s) fails to provide them in a timely manner, the Subcontractor requiring the sleeve(s) or embed(s) will be required to bear the cost associated with cutting and patching the work to properly install the sleeve(s) or embed(s). Provide coordination drawings for openings. Include rough-opening sizes and locations for roof mounted drains, equipment, etc. for coordination with the Roofing and Structural Steel Subcontractors.

3.0.4 Subcontractor is specifically aware of and accepts their responsibility for underground/under-slab layout for this scope of work and will coordinate with to overlay their work with respect to the work of the other trades.

3.0.5 Subcontractor shall coordinate any concrete or masonry penetrations and is responsible for all sleeving/conduit material for operations within its scope of work. Shall the Subcontractor fail to coordinate prior to footings, building slab, elevated slab, or masonry wall construction it will be the responsibility of this Subcontractor to provide means for proper routing of piping, conduit, or systems per the contract documents at no additional expense to the Contractor. Any penetrations after-the-fact will require coordination with the Contractor and written approval from the Structural Engineer of Record and applicable Subcontractor prior to any cutting, coring, or drilling.

3.0.6 Subcontractor shall furnish, layout, and install all UL listed sleeving at steel decking, CMU walls, shaft walls, etc. for this scope of work. All sleeving materials to be approved prior to procurement and install.

5.0 STRUCTURAL STEEL SCOPE OF WORK DESCRIPTION

5.0.1 Provide a to scale drawing providing dimensioned sizes and locations for all decking openings requiring miscellaneous framed openings during submittals for review and use by other trades as necessary.

5.0.2 Coordinate all routing, required clearances, and openings for this scope of work with the Structural Steel Subcontractor and Contractor to ensure required clearances are incorporated into Structural Steel design and shop drawings.

5.0.3 Provide scaled drawings providing dimensioned sizes and locations for all openings requiring miscellaneous framed rough openings. Subcontractor shall identify conflicts with structural and light gauge steel and communicate required openings and/or clearances. Provide these drawings and dimensions in a timely manner that will not slow the flow of submittals and production of structural steel.

6.0 WOOD, PLASTICS, AND COMPOSITES SCOPE OF WORK DESCRIPTION

6.0.1 Wood Blocking – The Plumbing Subcontractor shall furnish and install blocking/backing for all plumbing fixtures, pipe supports, water heaters, and other items provided as part of this Scope of Work which attach directly to light gauge metal framing, metal studs, gypsum sheathing, etc. and coordinate with Metal Framing, Insulation, Drywall, and Acoustical Ceiling Subcontractor so as to not impede drywall installation.

7.0 THERMAL AND MOISTURE PROTECTION SCOPE OF WORK DESCRIPTION

7.0.1 Firestop Systems – All penetrations through walls, ceilings, and/or floors shall be sealed to meet or exceed the requirements of the Contract Documents and all building codes, fire codes, etc., applicable to this project. Additionally, all penetrations shall be sealed with the required firesafing or firestopping materials to meet or exceed the fire rating requirements of the applicable wall, ceiling, and/or floor assembly as acceptable to the General Contractor, Designer, and governing authorities.

7.0.2 This Subcontractor will complete all penetration firestopping and firesafing for penetrations provided as part of this Scope of Work at all wall, floor, and ceiling types. Subcontractor penetrating (HVAC, Plumbing, Electrical, Fire Protection, Security, Controls, etc.) masonry partitions shall provide properly sized sleeves or core drill penetrations within all masonry walls. All through slab firestopping and sleeves are by the Subcontractor requiring the penetration (HVAC, Plumbing, Electrical, Fire Protection, Security, Controls, etc.).

7.0.3 The installing Subcontractor must provide UL approved details for each firestopping condition. If among the specified firestop manufacturers, no approved firestop assembly exists for non-standard openings in need of firestopping, mock-ups may be required for any proposed engineering judgment designs for approval by the General Contractor, the Architect, the Owner and/or the authority

having jurisdiction prior to final firestop installation. Accepted in-place mock-ups will be accepted as final work. All engineering judgements must be sealed by licensed North Carolina engineer provided by the installing Subcontractor.

7.0.4 Firestopping installers must provide proof of Factory Mutual Firm 4991 certification and approval. Work must be performed by installer who must provide evidence that they have been trained and achieved a passing score in a competency-based testing by the manufacturer whose products will be installed. All firestopping materials will be supplied by only one of the specified manufacturers. Mixing manufacturers materials will not be permitted. All subcontractors are required to use the same firestopping manufacturer. This Subcontractor shall coordinate with the Drywall, Framing, and Insulation Subcontractor and other MEP trades to ensure a single-source manufactured product is used for firestopping activities.

7.0.5 Joint Sealants - This Work shall include a complete Joint Sealant System, including but not limited to, all specified warranties, elastomeric joint sealants, solvent-release-curing joint sealants, latex joint sealants, miscellaneous joint sealants, backing, primer, cleaners, bond breaker tape, masking tape, accessory materials, etc. Include tooling, cleaning, and protection of all sealant joints.

7.0.6 Subcontractor shall be responsible for properly flashing all exterior penetrations made for installation of this scope of work, per the contract documents.

8.0 OPENINGS SCOPE OF WORK DESCRIPTION

8.0.1 This Subcontractor shall furnish and install all access doors required for this scope of work. Subcontractor shall coordinate keying with the General Contractor and Owner. Access doors and panels in walls, ceilings, or other surfaces shall be coordinated with subcontractors providing the substrate. Verify / coordinate a consistent manufacturer via submittal to architect via General Contractor.

9.0 INTERIOR FINISHES SCOPE OF WORK DESCRIPTION

9.0.1 Subcontractor shall be responsible for any associated costs with cutting, patching, and replacement of finishes due to any repairs, errors, or omissions due to the fault of this Subcontractor. Subcontractor shall be responsible for proof of damage by others that results in cutting, patching, and replacement of finishes.

22.0 PLUMBING SYSTEMS SCOPE OF WORK DESCRIPTION

22.0.1 This Subcontractor shall furnish all labor, materials, tools, taxes, insurance, equipment, hoisting, English speaking supervision, temporary utilities, and any other incidentals necessary to provide a complete turnkey Plumbing Systems Package and related components in accordance with the contract documents as well as the following clarifications.

22.0.2 Subcontractor is to obtain all necessary approvals for this scope of work including insurance underwriters, governmental agencies, or other authorities as may be required. Subcontractor warrants that system installation is in accordance with all codes, industry standards, and good engineering practices.

~~22.0.3 Subcontractor, Sitework Subcontractor, and General Contractor shall coordinate to verify the top of the next upstream manhole is lower than the building finish floor elevation. General Contractor shall contact engineer immediately for directions on installation if manhole top is equal to or higher than the finished floor level.~~

~~22.0.4~~22.0.3 Site Domestic Water and Sanitary Sewer Services - Unless noted otherwise herein, this Work shall include, but is not limited to, providing all necessary testing & inspections, excavation, backfill, piping, fittings, appurtenances, and final connections at location within five (5’ 0”) ~~feet~~ of building footprint for tie-in with the domestic water. ~~and~~ This subcontractor is responsible for taking the sanitary sewer service~~s~~ from the building to the~~as well as the~~ oil/water separator ~~interceptor~~, ~~sediment interceptor~~, lift station, and roof leader drainage installed by the Sitework subcontractor. All piping and installations within five (5’ 0”) ~~feet~~ of the building footprint are the responsibility of this Subcontractor.

~~22.0.5~~22.0.4 Identification of Piping Systems - This Work shall include providing identifying devices, including self-adhesive labels, painted stenciling, etc. (as required by the contract documents) for all piping, valves, equipment, etc. provided within this Scope of Work.

~~22.0.6~~22.0.5 Piping Specialties - This Work shall include providing all plumbing related piping specialty equipment where related to the plumbing system, including but not be limited to, strainers, air vents, backflow preventers, thermometers and test wells, pressure gauges and gauge cocks, test plugs for sensing pressure and temperature, pressure reducing valves, expansion tanks, flexible pipe connections, balancing valves, flow measuring stations, water flow readout meters, air separators, suction diffusers, triple duty valves, automatic flow control valves, accessories, etc., as required to comprise a complete Plumbing System. Coordinate all overhead plumbing piping to be located above the bottom cord of all roof joists to avoid conflicts and maintain the highest possible clear height.

~~22.0.7~~22.0.6 Natural Gas System – This Work shall include providing all gas plumbing, including but not limited to piping, fittings, restraints, regulators, pressure reducing valves, shutoff valves, emergency shutoff valves, etc. per the contract documents and AHJ. Subcontractor shall make all terminations and tie-ins to meter assembly, appliances, and equipment, per the contract documents.

~~22.0.8 Subcontractor has included supply and install of primary and overflow roof drains as well as tie-in to roof leader drainage system as installed by the Sitework subcontractor. Subcontractor shall coordinate setting and flashing of roof drain bodies with the Roofing subcontractor.~~

~~22.0.9~~22.0.7 Subcontractor shall provide and install concrete rings/donuts at all exterior at-grade

plumbing cleanouts, per the contract documents and authority having jurisdiction. This includes all yard cleanouts.

~~22.0.10~~22.0.8 Subcontractor shall furnish labor and material to hook-up and disconnect temporary water and sewer to General Contractor's trailer.

~~22.0.11~~22.0.9 Unless specifically noted otherwise within this Scope of Work, all sleeves or embeds set or cast into concrete, masonry, roofing, or other work shall be furnished and installed by this Subcontractor as it relates to this scope of work. Additionally, these items shall be provided in a timely manner so as not to delay the concrete, masonry, roofing, etc. scopes of work. In the event the Subcontractor requiring the sleeve(s) or embed(s) fails to provide them in a timely manner, the Subcontractor requiring the sleeve(s) or embed(s) will be required to bear the cost associated with cutting and patching the work as necessary to properly install the sleeve(s) or embed(s).

~~22.0.12~~22.0.10 Valves - This Work shall include providing all plumbing related valves, including but not limited to, gate valves, check valves, backflow preventers, hose and drain valves, plug valves, butterfly valves, relief valves, globe valves, ball valves, post indicator valves, block and bleed valves, temperature control valves, automated actuators, pressure reducing valves, etc. per the Contract Documents.

~~22.0.13~~22.0.11 Plumbing Systems Insulation - This Work shall include supply and install of all Plumbing Systems Insulation, including but not limited to, insulation at domestic hot and cold water piping, hot water recirculating water piping, hot water risers, drain and water supply piping exposed under handicapped lavatories, roof drain piping above ceilings, including underbody of drain, above slab plumbing waste lines, P-traps and horizontal pipe runs to vertical drops receiving discharge from ice machine drains, etc. as required per the Contract Documents. Also provide all insulation, fasteners, shielding, exterior aluminum jacketing, banding, piping insulation rigid supports, adhesive, mastic, and insulating cements as required to complete this Scope of Work. Piping, insulation, and heat tape shall also be furnished and installed by this subcontractor for General Contractor's on-site office trailers.

~~22.0.14~~22.0.12 Domestic Water Systems - This Work shall include the supply and install of a complete Domestic Hot and Cold-Water System, including but not limited to, all piping, fittings, accessories, wall hydrants, hose bibs, loose key handles, vacuum breakers, vacuum relief valves, air chambers, double check type backflow preventers, etc. as designated per the Contract Documents. Maintain proper separation between sewer and water lines and disinfect piping and test as required. This Subcontractor shall provide permanent connection, including but not limited to, trench excavation, trench bedding where required, backfill, compaction, piping, sleeves, fittings, etc., to the site domestic water services as designated per the contract documents.

~~22.0.15~~22.0.13 Water Heaters and Accessories - This Work shall include the supply and install of water heaters per the contract documents.

~~22.0.16~~22.0.14 Subcontractor agrees that all water heaters shall be filled with water and purged at

time of installation, or ~~if~~ as soon as possible, and/or in no event later than electric hook-up. This Subcontractor agrees to coordinate water heater start-up with Electrical Subcontractor and General Contractor.

~~22.0.17~~22.0.15 Plumbing Fixtures and Accessories - This Work shall include the supply and install of all plumbing fixtures and accessories for a turnkey package, including but not limited to, lavatories, toilets, sinks, urinals, bottle filling station(s), water cooler(s), wall hydrants, etc. including supports, trim, grout, caulk, sealants, vacuum breakers, water closet seats, trap primers, water hammer arresters, backflow preventers, chrome plated angle stops, check valves, etc. as designated within the plans and/or specifications. All standard duty and heavy-duty floor cleanouts, per the contract documents. Hose bibbs and wall hydrants per the contract documents.

~~22.0.18~~22.0.16 This scope of work shall include coordinating with Concrete Subcontractor and Flooring Subcontractor for verification of finished floor elevations to allow proper drainage to drain. Provide final drain elevation adjustments if required prior to final floor finishes. Floor drain and trench drain scope of work shall include, but not be limited to, drain accessories (sediment baskets, strainers, etc.), grates, grills, field welding, epoxy grout fill, setting tabs and frames, templates (if needed), etc. to provide a complete and functional drain system, per the contract documents.

~~22.0.19~~22.0.17 The Plumbing Subcontractor shall schedule, with applicable local and state health officials and/or agencies, a final inspection of the water and sewer systems no later than two (2) weeks prior to the time the system is scheduled to be placed into operation. The Plumbing Subcontractor shall have approved results of water tests, taken as part of this Scope of Work, available for the governing officials/agencies upon arrival on site.

~~22.0.20~~22.0.18 This Subcontractor shall provide and install all hub drains and trap primers for HVAC condensates, per the contract documents. Condensate lines shall be provided and installed by others from HVAC unit to hub drain.

~~22.0.21~~22.0.19 This Subcontractor shall provide roof boots for install by others.

~~22.0.22~~22.0.20 This Subcontractor shall test plumbing underground for leaks and needed repairs prior to slab pour. Subcontractor shall properly cap piping to ensure concrete does not get into the piping during concrete pours.

~~22.0.23~~22.0.21 The Plumbing Subcontractor shall furnish and install all required anchor bolts, hangers, isolators, channels, Unistrut, angles, embeds, and plates as required for a complete plumbing system, per the contract documents and seismic requirements.

~~22.0.24~~22.0.22 Codes, Permits and Inspection – All plumbing work shall meet or exceed all applicable code requirements per the contract documents and AHJ.

~~22.0.25~~22.0.23 All penetrations will be sealed to meet code. Pipe or sleeves need to be installed in

coordination with the Metal Framing, Insulation, Drywall, and Acoustical Ceiling Subcontractor to eliminate return trips by other trades. If pipes or sleeves are not installed in coordination, this Subcontractor will be responsible for the associated costs.

~~22.0.26~~22.0.24 Subcontractor shall provide all required backflow devices, within the building envelope, for this scope of work, per the contract documents. Subcontractor has included the necessary certification of backflow devices per the authority having jurisdiction.

~~22.0.27~~22.0.25 Video and record the bore of sewer drain and under slab piping to the exterior ground cleanout connection upon completion of work. Furnish a digital video file on flash drive to general contractor for documentation of pipe bore free of obstructions and defects. This documentation of under slab plumbing pipes to be a part of the closeout documentation provided by this Subcontractor.

~~22.0.28~~22.0.26 This Subcontractor acknowledges that its work must be coordinated with work of other trades that are to occupy the same general spaces and further agrees to coordinate its shop drawings, details, and submittals with those of the affected trades to ensure proper fit and coordination with such work. This coordination may require participation in coordination meeting, preinstallation conference and/or assistance with generating a coordinated drawing with multiple other affected trades.

~~22.0.29~~22.0.27 This Subcontractor shall review all applicable Contract Documents to confirm that this scope of work will fit into the space allotted and function in accordance with the design intent of the Contract Documents. All conflicts shall be reported to General Contractor in timely manner to allow corrections to be made accordingly to avoid delaying this scope of work or the overall project schedule. Requests for Information (RFI) shall be submitted in writing to Contractor; Verbal RFIs and/or responses are not acceptable or binding.

~~22.0.30~~22.0.28 The HVAC, Plumbing, Sprinkler, and Electrical Subcontractors shall coordinate their work closely with each other and the Drywall/Acoustical Ceilings Subcontractor as to provide /confirm locations of their ceiling mounted devices. The Plumbing Subcontractor is to meet with and coordinate with the Electrical, HVAC, Utility Piping, and the Sprinkler Subcontractor, to ensure that between the four subcontractors, all items whether Electrical, Plumbing, HVAC, Utility Piping, or fire protection related will be provided as needed and that the installation of any items will be completed by one or the other Subcontractors without any additional expense to the General Contractor or Owner.

~~22.0.31 Subcontractor shall provide all work required for this scope of work in connection with HVAC, Electrical, Sprinkler, Structural Steel, Concrete, Sitework, etc. scopes of work, including Owner furnished equipment, per the contract documents.~~

~~22.0.32~~22.0.29 Provide all tagging and identification for this scope of work, per the contract documents.

~~22.0.33~~22.0.30 Provide all testing, inspection, or flushing of piping required for this scope of work, per the contract documents.

~~22.0.34~~22.0.31 ~~Subcontractor is responsible for draining their systems if required by weather conditions~~.

~~22.0.35~~22.0.32 All piping sizes and material types to be per the contract documents. Should this Subcontractor identify conflicting information within the contract documents it shall be its responsibility to notify the Contractor for clarification.

~~22.0.36~~22.0.33 Hoisting – This Subcontractor shall provide all Hoisting as required to facilitate this scope of work, including but not limited to cranes, hoisting equipment and rigging, insurance, certified operator, inspections, lighting, flagmen, communication devices and all other incidentals required.

~~22.0.37~~22.0.34 Subcontractor has included final connections to all equipment and appliances requiring plumbing and natural gas connections as indicated by the contract documents, whether furnished by this Subcontractor or others. Subcontractor shall monitor startup of gas appliances.

~~22.0.38~~22.0.35 This Subcontractor shall furnish and install all material and equipment shown on the plans and/or specifications and shall receive and install all equipment, related to plumbing, furnished by owner, as indicated on drawings. This includes all final connections.

~~22.0.39~~22.0.36 Supporting Devices - This Work shall include providing all related supporting devices, including but not limited to, pipe hangers and supports, seismic pipe hangers and supports, if required by the specifications or building code, pipe saddles, vibration isolation hangers, and miscellaneous structural steel supports and/or angle frame supports which are needed to support equipment provided by this Subcontract, whether reflected or not within the Contract Documents and which are not specifically designated to be provided by another Subcontractor. This Subcontractor shall be responsible for obtaining written approval for all attachments (i.e. beam clamps, all thread hangers, Unistrut, clamps, braces, etc.) to other Subcontractors work prior to commencing with the installation of said attachments. Failure to obtain written approval from the respective Subcontractor and/or Designer may result in the GC's rejection of the installation(s). Also install all hanging wires, supports, etc. to meet seismic requirements, where required by the technical specifications and/or governing code for all equipment, etc. provided as part of this Scope of Work, where specific equipment, etc. is scheduled within an acoustical paneled ceiling system, suspended gypsum ceiling system and/or at an exposed structure condition.

~~22.0.40~~22.0.37 This Subcontractor shall be responsible for connecting all work provided as part of this Subcontract to all site utilities and/or plumbing systems (i.e., water, sanitary sewer, gas~~, roof leader drainage~~, etc.) such that proper drainage and connections result, particularly when installing condensate drain lines that will be required, in positive drainage.

~~22.0.41~~22.0.38 Subcontractor shall furnish/install ~~dishwashers and~~ the garbage disposal~~s~~. ~~All~~

~~parties agree that both items will be provided and stocked by others.~~ This Subcontractor shall be responsible for making final plumbing and natural gas connections to owner provided equipment listed in specification 114510.1 Appliance Schedule. ~~uncrate all dishwashers and disposals and deliver broken down packing materials to onsite dumpster provided by General Contractor.~~

~~22.0.42 Subcontractor shall provide and install all washing machine and ice maker boxes per the contract documents, including as applicable at any rated walls. This shall also include hammer arrestors. This subcontract shall include the knockout of the washer drain cap, prior to washer installation. Final hook-up of washing machine and ice maker by others.~~

31.0 SITEWORK SCOPE OF WORK DESCRIPTION

31.0.1 Excavation, Trenching, Backfilling, Rough Grading and Compaction - This Work shall include, but not be limited to, all excavation, trenching, backfilling, rough grading, shoring and bracing, where required, pumping and dewatering, if required, and compaction work associated with the proper installation of all work required of this Subcontract. Excess excavated material shall be moved to a location specified by the Construction Manager.

—OTHER SCHEDULE SUMMARY INFORMATION—

The Substantial Completion date for the Plumbing Subcontractor is as reflected within the Construction Schedule. Special attention should be directed to the Construction Schedule for project sequencing requirements which are a requirement of this Scope of Work.

END OF SECTION
TRADE PACKAGE SCOPE OF WORK:
22A PLUMBING SYSTEMS SUBCONTRACT

TRADE PACKAGE SCOPE OF WORK

23A – MECHANICAL (HEATING, VENTILATING, AND AIR CONDITIONING) SUBCONTRACT

Furnish all labor, materials, tools, taxes, safety, insurances, equipment, hoisting, cranes, supervision, and all other incidentals necessary to accomplish all Mechanical (**Heating, Ventilating, and Air Conditioning**) in accordance with all Contract Documents and as defined within **Trade Package General Scope Requirements** and this Scope of Work.

Subcontractors/Suppliers performing work on multiple portions of the project site (i.e., buildings, parking area, site, etc.) shall provide separate equipment, hoisting, cranes, full-time English-speaking supervision including, but not limited to management, superintendent, on site foreman, tradesman, laborers, etc. for each portion unless agreed to otherwise in writing by the General Contractor. If the project needs and schedule are not being met to the satisfaction of the General Contractor, written approval will be rescinded, and the original staffing requirements shall be provided by the Subcontractor.

Project Specifications for the Mechanical (**Heating, Ventilating, and Air Conditioning**) Scope of Work are listed below. This Subcontractor or Supplier shall carefully examine all specification sections and drawings within the Contract Documents and be responsible for all work described within this Scope of Work and as required on the project.

PROJECT SPECIFICATIONS

This Subcontractor is responsible for all Division 1 - General Requirements prepared by the Architect, Design Consultants, and/or General Contractor or as designated elsewhere within the Technical Specifications or Drawings as applicable to this Trade Package Scope of Work.

DIVISION 01 – GENERAL REQUIRMENTS	
GC Req.	General Requirements Manual
GC Req.	Trade Package Scope Manual
GC Req.	Trae Package General Scope Requirements
Division 01	All Division 01 Specification as Required by Samet Corporation

Primary Responsibility

This Subcontractor is responsible for all Primary Specification Responsibilities listed below unless this Scope of Work specifically states otherwise.

PRIMARY TECHNICAL SPECIFICATION RESPONSIBILITIES (PROJECT MANUAL)	
	Specifications are included on the Drawings
23-050-00	~~General Mechanical~~ Common Work Results HVAC
~~23-00-10~~	~~Existing Conditions~~
~~23-00-20~~	~~Mechanical Demolition~~
23-05-13	Common Motor Requirements for HVAC Equipment
~~23-05-16~~	~~Expansion Fittings and Loops for HVAC Piping~~
~~23-05-17~~	~~Sleeves and Sleeve Seals for HVAC Piping~~

~~23 05 19~~	~~Meters and Gauges for HVAC Piping~~
~~23 05 23.12~~	~~Ball Valves for HVAC Piping~~
~~23 05 23.14~~	~~Check Valves for HVAC Piping~~
23 05 29	Hangers and Ssupports for HVAC Piping and Equipment
23 05 48~~.13~~	Vibration and Seismic Controls for HVAC
~~23 05 53~~	~~Identification for HVAC Piping and Equipment~~
23 05 93	Testing, Adjusting, and Balancing for HVAC
23 07 ~~13~~00	HVAC~~Duct~~ Insulation
~~23 07 19~~	~~HVAC Piping Insulation~~
~~23 08 13~~	~~Commissioning of Mechanical Systems~~
23 09 00	~~Instrumentation and Control for HVAC~~ Building Automation System
~~23 21 13~~	~~Hydronic Piping~~
~~23 21 16~~	~~Hydronic Piping Specialties~~
~~23 21 23~~	~~Hydronic Pumps~~
23 23 00	Refrigerant Piping
~~23 25 00~~	~~HVAC Water Treatment~~
23 31 13	Metal Ducts
23 33 00	Air Duct Accessories
23 34 23	HVAC Power Ventilators
~~23 34 39~~	~~High-Volume, Low Speed Fans~~
~~23 36 00~~	~~Air Terminal Units~~
23 37 13	Diffusers, Registers, and Grilles
~~23 41 00~~	~~Particulate Air Filtration~~
~~23 52 16~~	~~Condensing Boilers~~
~~23 74 16.11~~	~~Packaged Rooftop Air Conditioning Units~~
~~23 81 26~~	~~Ductless Split-System Air-Conditions~~
233723	HVAC Gravity Ventilators
235250	VRF Equipment
237200	Dedicated Outside Air System
238239	Wall and Ceiling Heaters

Secondary Responsibility

This Subcontractor is responsible for all Secondary Specification Responsibilities listed below to the extent applicable, or defined, within this Scope of Work.

SECONDARY TECHNICAL SPECIFICATION RESPONSIBILITIES	
Gen. Note	**Subcontractor is responsible for complete Specifications package as it relates to the Heating, Ventilating, and Air Conditioning Systems Package scope of work.**
Division 03	Concrete
Division 04	Masonry
Division 05	Metals
Division 07	Thermal and Moisture Protection
Division 08	Openings

Division 09	Finishes
Division 22	Plumbing
Division 26	Electrical
Division 27	Communications
Division 28	Electrical Safety

The Mechanical (**Heating, Ventilating, and Air Conditioning**) Subcontractor shall be responsible for complying with the requirements of each Scope of Work Description / Clarification Section listed below, **even if** those requirements are not shown within the Specification Sections listed above.

This Subcontractor shall be responsible for all Primary Specification Responsibilities identified above in their entirety. All costs associated with Primary Specification Responsibilities shall be included in this Subcontractor's Scope of Work and reflected in bid amount.

This Subcontractor shall be at least partially responsible for Secondary Specification Responsibilities identified above. The Secondary Specifications identify work scopes for which this Subcontractor is not wholly responsible but shall be applicable as it relates to the execution of Primary Specification Responsibilities. This may include a varying degree of responsibility from simple coordination to performing entire portions of work. The Secondary Specifications are not intended to be all inclusive and shall not limit the Subcontractor in any way with regards to installation of work identified in Primary Specification Responsibilities.

The Mechanical (**Heating, Ventilating, and Air Conditioning**) Subcontractor is responsible for all Work described herein and below unless specifically noted otherwise.

3.0 CONCRETE SCOPE OF WORK DESCRIPTION

3.0.1 Cast-In-Place Concrete - Equipment / Housekeeping pads clearly defined within the contract documents or communicated by this Subcontractor will be provided by the Concrete Foundations, Walls, & Slabs Subcontractor. This Subcontractor shall be responsible for coordination and layout of the equipment / housekeeping pads required for this scope of work.

3.0.2 Subcontractor shall coordinate any concrete or masonry penetrations and is responsible for all sleeving/conduit material for operations within its scope of work. Shall the Subcontractor fail to coordinate prior to footings, building slab, elevated slab, or masonry wall construction it will be the responsibility of this Subcontractor to provide means for proper routing of piping, conduit, or systems per the contract documents at no additional expense to the Contractor. Any penetrations after-the-fact will require coordination with the Contractor and written approval from the Structural Engineer of Record and applicable Subcontractor prior to any cutting, coring, or drilling.

3.0.3 Unless specifically noted otherwise within a Trade Package Scope of Work, all sleeves, conduit, boxes, block outs, or embeds set or cast into concrete, masonry or other work shall be furnished and installed by the Subcontractor requiring these items to complete the installation of its respective work. The set items must be secured in place to prevent movement during the proceeding activity.

Additionally, these items shall be provided in a timely manner so as not to delay the concrete, masonry, or other work. In the event the Subcontractor requiring the sleeve(s) or embed(s) fails to provide them in a timely manner, the Subcontractor requiring the sleeve(s) or embed(s) will be required to bear the cost associated with cutting and patching the work to properly install the sleeve(s) or embed(s). Provide coordination drawings for openings. Include rough-opening sizes and locations for roof mounted HVAC units for coordination with the Roofing and Structural Steel Subcontractors.

3.0.4 Subcontractor shall furnish, layout, and install all UL listed sleeving at steel decking, CMU walls, shaft walls, etc. for this scope of work. All sleeving materials to be approved prior to procurement and install.

5.0 STRUCTURAL STEEL SCOPE OF WORK DESCRIPTION

~~5.0.1 Provide a to scale drawing providing dimensioned sizes and locations for all decking openings requiring miscellaneous framed openings during submittals for review and use by other trades as necessary.~~

5.0.2 Coordinate all routing, required clearances, and openings for this scope of work with the Structural Steel Subcontractor and General Contractor to ensure required clearances are incorporated into the Structural Steel design and shop drawings.

5.0.3 Provide scaled drawings providing dimensioned sizes and locations for all openings requiring miscellaneous framed rough openings. Subcontractor shall identify conflicts with structural and light gauge steel and communicate required openings and/or clearances. Provide these drawings and dimensions in a timely manner that will not slow the flow of submittals and production of structural steel.

7.0 THERMAL AND MOISTURE PROTECTION SCOPE OF WORK DESCRIPTION

7.0.1 Firestop Systems – This Subcontractor shall provide all necessary labor and material to ensure ~~All~~ penetrations through walls, ceilings, and/or floors shall be sealed to meet or exceed the requirements of the Contract Documents and all building codes, fire codes, etc., applicable to this project. Additionally, all penetrations shall be sealed with the required firesafing or firestopping materials to meet or exceed the fire rating requirements of the applicable wall, ceiling, and/or floor assembly as acceptable to the General Contractor, Designer, and governing authorities.

7.0.2 The HVAC Subcontractor will complete all penetration firestopping and firesafing for penetrations provided as part of this Scope of Work at all wall, floor, and ceiling types. Subcontractor penetrating (HVAC, Plumbing, Electrical, Fire Protection, Security, Controls, etc.) masonry partitions shall provide properly sized sleeves or core drill penetrations within all masonry walls. All through slab firestopping and sleeves are by the Subcontractor requiring the penetration (HVAC, Plumbing, Electrical, Fire Protection, Security, Controls, etc.).

7.0.3 The installing Subcontractor must provide UL approved details for each firestopping condition. If among the specified firestop manufacturers, no approved firestop assembly exists for non-standard openings in need of firestopping, mock-ups may be required for any proposed engineering judgment designs for approval by the General Contractor, the Architect, the Owner and/or the authority having jurisdiction prior to final firestop installation. Accepted in-place mock-ups will be accepted as final work. All engineering judgements must be sealed by licensed North Carolina engineer provided by the installing Subcontractor.

7.0.4 Firestopping installers must provide proof of Factory Mutual Firm 4991 certification and approval. Work must be performed by installer who must provide evidence that they have been trained and achieved a passing score in a competency-based testing by the manufacturer whose products will be installed. All firestopping materials will be supplied by only one of the specified manufacturers. Mixing manufacturers materials will not be permitted. All subcontractors are required to use the same firestopping manufacturer. This Subcontractor shall coordinate with the Drywall, Framing, and Insulation Subcontractor and other MEP trades to ensure a single source manufactured product is used for firestopping activities.

7.0.5 Joint Sealants - This Work shall include a complete Joint Sealant System, including but not limited to, all specified warranties, elastomeric joint sealants, solvent-release-curing joint sealants, latex joint sealants, miscellaneous joint sealants, backing, primer, cleaners, bond breaker tape, masking tape, accessory materials, etc. Include tooling, cleaning, and protection of all sealant joints.

7.0.6 This Subcontractor shall be responsible for properly flashing all exterior penetrations made for installation of this scope of work, per this scope of work and the contract documents.

8.0 OPENINGS SCOPE OF WORK DESCRIPTION

8.0.1 This Subcontractor shall furnish and install all access doors required for this scope of work. Subcontractor shall coordinate keying with the Contractor and Owner. Access doors and panels in walls, ceilings or other surfaces shall be coordinated with subcontractors providing the substrate. Verify / coordinate a consistent manufacturer via submittal to architect via Contractor.

8.0.2 Louvers and Vents – This Work shall include furnishing and installing a complete mechanical and architectural louver and vent system, including but not limited to intake louvers, exhaust louvers, wall vents, etc. with insect screen, bird screen, blank-off panels, fasteners, anchors, gasketing, accessories and miscellaneous incidentals for a complete louvers and vents system, per the contract documents. Subcontractor shall coordinate opening sizes and framing requirements with the Masonry, Metal Stud, and Hollow Metal Door Subcontractors for installation / connection of louvers and vents to framing or openings.

9.0 INTERIOR FINISHES SCOPE OF WORK DESCRIPTION

9.0.1 Subcontractor shall be responsible for any associated costs with cutting, patching, and replacement of finishes due to any repairs, errors, or omissions due to the fault of this Subcontractor.

Subcontractor shall be responsible for proof of damage by others that results in cutting, patching, and replacement of finishes.

23.0 MECHANICAL (HEATING, VENTILATION, AND AIR CONDITIONING)

23.0.1 HVAC Systems – This Work shall include providing a complete HVAC system and related components per this scope of work, the contract documents, applicable building, and HVAC codes, and authorities having jurisdiction for this project.

23.0.2 This Subcontractor shall furnish all labor, materials, tools, taxes, insurance, equipment, hoisting, commissioning, English speaking supervision, temporary utilities, and any other incidentals necessary to provide a complete HVAC Systems Package in accordance with the contract documents as well as the following clarifications.

23.0.3 Codes, Permits, and Inspections – All HVAC Work shall meet all applicable code requirements. Obtain and pay for all necessary permits, inspection fees, etc. and all other charges for work designated within the contract documents and required by authority having jurisdiction.

23.0.4 The HVAC Subcontractor shall consult the project specific requirements of the contract documents to verify any requirements associated with this trade scope including but not limited to recycling requirements, commissioning requirements, indoor air quality management both during construction and post construction.

23.0.5 This Subcontractor shall include providing and installing a complete HVAC system as defined within this Scope of Work, the Project Specifications and Drawings related to the HVAC work of this project. The scope of work includes turnkey HVAC systems. The specifications noted herein are part of this Scope of Work, however it is not intended to be all inclusive. The HVAC Subcontractor is responsible for all mechanical work complete and related work covered under related specification sections.

~~23.0.6 Provide Building Information Modeling (BIM) Coordination drawings for the HVAC scope of work. If conflicts are found in the field, no additional cost will be accepted for the required relocations of HVAC scope of work due to lack of coordination with other trades.~~

~~23.0.7 The coordination (BIM clash detection), installation, startup / commissioning, and verification of the proper operation of equipment provided under this subcontract is the responsibility of this Subcontractor. Initial equipment startup is by this Subcontractor.~~

~~23.0.8~~23.0.6 This Subcontractor is to provide all necessary start-ups of equipment. Provide all testing, balancing, and adjusting of all systems. Final test and balance report to be submitted for approval within one week after field adjustments are completed. But no later than thirty (30) days prior to Substantial Completion date or contract documents whichever is more stringent. This subcontractor is responsible for conforming all commissioning requirements~~.~~

~~23.0.9~~23.0.7 This Subcontractor to provide engineer's stamp, if necessary, on shop drawings and

submittals per the contract documents. ~~.~~

~~23.0.10~~23.0.8 Subcontractor is to obtain all necessary approvals for this phase of work including insurance underwriters, governmental agencies, or other authorities as may be required. Subcontractor warrants that system installation is in accordance with all codes, industry standards, and contract documents.

~~23.0.11~~23.0.9 Subcontractor shall ensure that all mechanical equipment shall be installed according to contract documents and manufacturer's recommendations. Shall there be a conflict between the contract documents and manufacturer's recommendations for installation; it shall be this Subcontractor's responsibility to notify the General Contractor prior to any equipment/material being purchased for the project~~the installation of any equipment~~.

~~23.0.12 Furnish and install all equipment and materials per the contract documents, including but not limited to: packaged rooftop units and dehumidifiers, rooftop air handling units with curbs, vaults, and batt insulation, fans, exhaust fans, split system HVAC and heat pumps, ductless heat pumps, ductless air handlers, unit electric heaters, gas unit heaters (infrared), condensing boiler, wet rotor pumps, condensate neutralization tank system, air separator system, BACNET interfaces, dryer boxes, filters and filter housings, registers, circulating fans, HVAC equipment disconnects where scheduled with equipment, stainless steel plenums, drop box plenums with drum louvers, sheet metal ductwork, flex duct, fabric ductwork, exterior ductwork, acoustical ductwork, diffusers, air distribution, galvanized ductwork, spiral duct, roof mounted duct and equipment/accessories, insulation, sealing foam, roof curbs (including sloped curbs), roof vaults, roof hoods, louvers, control panels, test and balance, pre-functional equipment checks, equipment start-up for equipment installed under this subcontract, pilot lights, noise and vibration controls, etc. required for this scope of work.~~

26.0.1 Building Automation System - This Work shall include providing a complete Building Automation System, Direct Digital Control System, Energy Management, BACnet Compatibility and Measurement System for the Heating, Ventilating, and Air Conditioning systems including but not limited to, wire, conduit and junction boxes at applicable building locations (reference following paragraph for further clarification), control devices, control cabinets, networking and software interface capability, installation of duct mounted smoke detectors furnished by this Subcontractor, personal computer work stations, fire stats, thermostats, contacts, pressure sensors, pressure transmitter, temperature sensors, control valves, dampers and actuators, network terminal, software, DDC panels, digital controllers, testing, guarantees, maintenance and training and all other requirements to provide the Owner with a complete and operational system as specified within the Contract Documents.

23.0.10 This Subcontractor shall furnish and install all equipment and materials per the contract documents, including but not limited to: DOAS System, Indoor Units, VRF Heat Pumps, Branch Controllers, Electric Heaters, Infrared Heaters, Natural Gas Heaters, Exhaust Fans, Grilles, Registers, Diffusers, HVLS Fans, Thermostats, etc. to provide a completed Mechanical Scope of Work.

23.0.11 This Subcontractor is responsible for furnishing and installing complete Plymovement Vehicle

Exhaust System including but not limited to: track rails, seismic restraints, balancers, saddles, hoses, its control components that are compatible with the Building Automation System, etc. per the contract documents (Reference M5.03).

~~23.0.13~~23.0.12 HVAC Supporting Devices - This Work shall include providing all HVAC related supporting devices, including but shall not be limited to, pipe hangers and supports, pipe saddles, vibration isolation hangers, and miscellaneous structural steel supports and/or angle frame supports which are needed to support equipment and or piping provided by this Subcontract, whether reflected or not within the Contract Documents and which are not specifically designated to be provided by another Subcontractor. The HVAC Subcontractor shall be responsible for obtaining written approval, and/or manufacturer's approval for all attachments (i.e. beam clamps, all thread hangers, Uni-strut, clamps, braces, etc.) to other Subcontractors work prior to commencing with the installation of said attachments. Failure to obtain written approval from the respective Subcontractor, manufacturer, and/or Designer may result in rejection of the installation(s). Also, install all hanging wires, supports, etc. to meet requirements as required by the technical specifications and/or governing code for all equipment, etc. as provided as part of this Scope of Work, where specific equipment, etc. is scheduled within an acoustical paneled ceiling system, suspended gypsum ceiling system and/or at an exposed structure condition.

~~23.0.14 Rooftop Units (RTU) - furnish and install all associated equipment and materials for a complete system, per the contract documents.~~

~~23.0.15 Power Ventilators - furnish and install all associated equipment and materials for a complete system, per the contract documents.~~

~~23.0.16~~23.0.13 ~~Hydronic System – furnish and install all associated equipment and materials for a complete system, per the contract documents~~.

~~23.0.17 Variable Air Volume Terminal Units – furnish and install all associated equipment and materials for a complete system, per the contract documents.~~

~~23.0.18~~23.0.14 ~~Variable Refrigerant Flow System – furnish and install all associated equipment and materials for a complete system, per the contract documents~~.

~~23.0.19 Energy Recovery Ventilators - The HVAC Subcontractor shall furnish and install all energy recovery ventilators, including but not limited to filters, motors, controls, fans, dampers, filters, heat wheels, compressors, packaged refrigerant systems, indirect gas furnaces, enthalpy, wheels, pre-fab roof curbs, etc. per the contract documents.~~

~~23.0.20 Ductless Split-System Air Conditioning Units / Split-System Air Conditioners – provide and install all ductless split-system air conditioning units complete and all split-system air conditioners complete including evaporator-fan units, compressor-condenser units in accordance with the contract documents.~~

~~23.0.21 Roof Curb Assemblies – The TPO Membrane Roofing Subcontractor(s) shall include flashing all penetrations, equipment roof curbs, and pipe roof curbs scheduled or required within the designated flat or standing seam roof system (if applicable) to accommodate equipment or work provided by this Subcontractor. The PVC Membrane Roofing Subcontractor(s) shall closely coordinate this work with HVAC, Plumbing, and Electrical Subcontractors. All Roof Curbs required to complete or accommodate this scope of work shall be furnished and installed by the HVAC Subcontractor prior to roofing membrane install.~~

~~23.0.22 This Subcontractor shall furnish and install condensing units, air handlers, ductless split system units, packaged air-cooled heating and cooling units, air distribution devices, fans, electric unit heaters, wall heaters, coils, etc. per contract documents including all accessories and piping.~~

23.0.15 This subcontractor is responsible for the layout/coordination of all curbs in the Mechanical Scope of Work.

~~23.0.23~~23.0.16 Furnish and install all piping as it relates to work within this trade package, including valves, fittings, sleeves, hangers, supports, etc. as required for a complete HVAC system, per the contract documents.

~~23.0.24~~23.0.17 HVAC Subcontractor shall furnish and install all metal duct, duct board, flex duct, diffusers, registers, grilles, heat detectors, hangers, structural support framing, duct and pipe insulation, carbon monoxide detectors, nitrogen dioxide detectors, and their accessories in accordance with contract documents. Flex duct shall be limited to the lengths indicated on the contract documents.

~~23.0.25~~23.0.18 HVAC Subcontractor to furnish and install insulation on all ductwork and piping including mineral wool, elastomeric thermal insulation, removable insulation covers, duct liners, vapor retarders, accessories & attachments as indicated on contract documents.

~~23.0.26~~23.0.19 Subcontractor ensures all dryer exhaust venting and bath exhaust venting shall be installed in accordance with the maximum distances and bends as allowed by the contract documents and applicable building codes.

~~23.0.27~~23.0.20 Subcontractor shall verify and ensure installation of all intake openings are located the minimum distance per code from all exhaust locations.

~~23.0.28~~23.0.21 Subcontractor shall furnish and install all fire dampers and transfer grilles, per the contract documents.

~~23.0.29~~23.0.22 Subcontractor shall install refrigerant lines. Refrigerant lines to be installed per the manufacturer's recommendations. Refrigeration service tubing with brazed joints. All refrigerant line piping shall be in accordance with the contract documents, building codes, and applicable energy codes. The Subcontractor acknowledges that all refrigerant insulation thicknesses have been reviewed and accounted for per all applicable codes.

~~23.0.30~~23.0.23 Coordinate rough-in locations with all substrates as required including but not limited to clearances and openings in roof frames, roof decking, structural steel, masonry walls, metal stud walls and ceilings, etc. with each respective trade subcontractor. Ensure that any wall coring for through wall piping is installed per the architect's guidelines. Cutting of roof membrane by others. Subcontractor shall coordinate termination of roof penetrations with the Contractor and Roofing Subcontractor.

~~23.0.31~~23.0.24 Subcontractor shall coordinate location of rooftop equipment, line-set, etc. locations and penetrations with the Roofing and Electrical subcontractors.

~~23.0.32~~23.0.25 Subcontractor shall furnish and install all dampers for this scope of work including but not limited to barometric dampers, motor operated dampers, radiation dampers, manual volume dampers, low pressure smoke-fire dampers, low pressure fire dampers, smoke-fire dampers with rated access doors or panels per the contract documents and applicable building codes. All actuators on dampers shall be per the contract documents. All dampers shall be UL listed where required.

~~23.0.33~~23.0.26 Duct detectors shall be factory installed per the contract documents. ~~in each RTU and wired for unit shutdown and FACP interlock by Electrical / Fire Alarm Subcontractor, as required per the contract documents~~.

~~23.0.34~~23.0.27 All required thermostats and associated wiring are included in this subcontract agreement.

~~23.0.35~~23.0.28 Supporting Devices - This Work shall include providing all related supporting devices, including but not limited to, hangers and supports, compliance with applicable wind loads, seismic restraints, if required by the specifications or building code, saddles, vibration isolation hangers, This Subcontractor shall be responsible for obtaining written approval for all attachments (i.e. beam clamps, all thread hangers, galvanized angle, Unistrut, clamps, braces, etc.) to other subcontractors work prior to commencing with the installation of said attachments. Failure to obtain written approval from the respective Subcontractor and/or Designer may result in the rejection of the installation(s). Also install all hanging wires, supports, etc. to meet seismic requirements, where required by the technical specifications and/or governing code for all equipment, etc. provided as part of this Scope of Work, where specific equipment, etc. is scheduled within an acoustical paneled ceiling system, suspended gypsum ceiling system and/or at an exposed structure condition. All code required vibration isolation and piping supports are included.

~~23.0.36~~23.0.29 HVAC Subcontractor responsible for furnishing and installing all piping specialties including, but not limited to, escutcheons, floor plates, fittings, flexible pipe connectors, etc. as indicated in the contract documents. Provide and install all required vibration isolation and piping expansion supports.

23.0.30 This Subcontractor to provide cleaning of ductwork as required. This shall include protecting all stored and installed ductwork with temporary dust covers during storage and installation.

~~23.0.37~~23.0.31 This Subcontractor shall provide two washable filters per the contract documents.

~~23.0.38~~23.0.32 Provide all identification or labeling of this trade's work, including but not limited to Equipment Label Schedule, equipment labels, equipment markers, access panels & door markers, warning signs, warning labels, pipe labels, duct labels, valve tags, etc. as required for complete HVAC system labeling and identification.

~~23.0.39~~23.0.33 As-built drawings to be provided where installation differs significantly from design drawings. Other coordination to be performed in onsite meetings. If conflicts are found, no additional costs will be accepted for the required relocation of duct or plenum work due to lack of coordination with other trades. Provide /confirm locations of ceiling mounted devices. Provide a detailed drawing of each mechanical room. Provide layout of concrete equipment pads.

~~23.0.40~~23.0.34 Furnish and install all condensate drain piping, pans, splash blocks, etc. Routing of condensate drains included per the contract documents.

~~23.0.41~~23.0.35 Subcontractor shall furnish and install pumps for condensate lines as needed or required, per the contract documents and authority having jurisdiction.

~~23.0.42~~23.0.36 All conduit and low voltage electrical work associated with this subcontract shall comply with electrical portion of the contract documents.

~~23.0.43~~23.0.37 Materials in each area of the building shall comply with NEMA classifications noted in the plans and specifications. This includes hanger and support materials, conduits, fasteners, joint fillers, etc.

~~23.0.44~~23.0.38 Include providing and installing all disconnects to all HVAC equipment as set forth within the respective equipment schedule and contract documents.

~~23.0.45~~23.0.39 Hoisting – This Subcontractor shall provide all Hoisting as required to facilitate this scope of work, including but not limited to, insurance, certified operator(s), certified riggers, inspections, lighting, flagmen, communication devices and all other incidentals required for safe operations. Note that multiple cranes may be required to meet the project schedule requirements. The use of helicopters for equipment installation/setting is allowable. However, all coordination, permitting, and possible weekend work is by this subcontractor.

23.0.40 Include final low voltage connections to all HVAC equipment, whether furnished by this Subcontractor or the Owner.

~~23.0.46~~23.0.41 This Subcontractor is responsible for coating/painting all natural gas lines per contract documents (Reference M0.02 Note 27).

~~23.0.47 SafeAir CO/NO2 Vehicle Exhaust system to be Owner supplied and installed. Subcontractor shall include coordination and tie-in with this scope of work as necessary, per the contract documents and associated manufacturer.~~

~~23.0.48~~23.0.42 Provide all independent testing, balancing, and adjusting of all systems. Final test and balance certified report to be submitted for approval within two weeks after field adjustments are completed.

~~23.0.49~~23.0.43 Control wiring, CO2 sensors and all line and low voltage control and interlock wiring for all items provided or included within this scope of work shall be provided, as required by the plans and/or specifications, particularly as they concern code compliance. Control wiring not shown as being provided by Electrical Subcontractor shall be provided by the HVAC Subcontractor.

~~23.0.50~~23.0.44 The Electrical Subcontractor will provide electrical service to and final connections for HVAC equipment, etc. provided as part of this Scope of Work, however, any electrical or control service not specifically provided by the Electrical Subcontractor and required by the HVAC Subcontractor shall be provided by the HVAC Subcontractor per contract documents.

~~23.0.51~~23.0.45 The HVAC Subcontractor shall provide all necessary Owner training related to the different mechanical equipment being provided as part of this Scope of Work.

~~23.0.52~~23.0.46 Subcontractor will coordinate, cooperate, and work with the Electrical, Fire Alarm, and Plumbing~~, and Elevator Subcontractors~~ with regards to overlapping scopes of work, involving detectors, modules, relays, etc.

~~23.0.53~~23.0.47 The HVAC, Plumbing, Sprinkler, and Electrical Subcontractors shall coordinate their work closely with each other and the Drywall/Acoustical Ceilings Subcontractor as to provide /confirm locations of their ceiling mounted devices. The Plumbing Subcontractor is to meet with and coordinate with the Electrical, HVAC, Utility Piping, and the Sprinkler Subcontractor, to ensure that between the four subcontractors, all items whether Electrical, Plumbing, HVAC, Utility Piping, or Fire Protection related will be provided as needed and that the installation of any items will be completed by one or the other Subcontractors without any additional expense to the General Contractor or Owner.

~~23.0.54~~23.0.48 This trade shall be responsible for coordinating with other trades work to ensure all conflicts are resolved prior to fabricating equipment and/or materials.

~~23.0.55~~23.0.49 This Subcontractor shall install MEP Systems and equipment arrangements in a fashion to provide maintenance access and service by grouping and positioning valves and fire alarm connections where possible in accessible locations.

—OTHER SCHEDULE SUMMARY INFORMATION—

The Substantial Completion date for the **Heating, Ventilating, and Air Conditioning** Subcontractor is as reflected within the Construction Schedule. Special attention should be directed to the Construction Schedule for project sequencing requirements which are a requirement of this Scope of Work.

END OF SECTION

TRADE PACKAGE SCOPE OF WORK:
23A - HEATING, VENTILATING, AND AIR CONDITIONING SUBCONTRACT

TRADE PACKAGE SCOPE OF WORK

26A ELECTRICAL, 27A COMMUNICATIONS, and 28A ELECTRONIC SAFETY & SECURITY SUBCONTRACT

Furnish all labor, materials, tools, taxes, safety, insurances, equipment, hoisting, cranes, supervision, and all other incidentals necessary to accomplish all **Electrical, Communications, and Electronic Safety & Security** in accordance with all Contract Documents and as defined within **Trade Package General Scope Requirements** and this Scope of Work.

Subcontractors/Suppliers performing work on multiple portions of the project site (i.e., buildings, parking area, site, etc.) shall provide separate equipment, hoisting, cranes, full-time English-speaking supervision including, but not limited to management, superintendent, on site foreman, tradesman, laborers, etc. for each portion unless agreed to otherwise in writing by the General Contractor. If the project needs and schedule are not being met to the satisfaction of the General Contractor, written approval will be rescinded, and the original staffing requirements shall be provided by the Subcontractor.

Project Specifications for the **Electrical, Communications, and Electronic Safety & Security** Scope of Work are listed below. This Subcontractor or Supplier shall carefully examine all specification sections and drawings within the Contract Documents and be responsible for all work described within this Scope of Work and as required on the project.

PROJECT SPECIFICATIONS

This Subcontractor is responsible for all Division 1 - General Requirements prepared by the Architect, Design Consultants, and/or General Contractor or as designated elsewhere within the Technical Specifications or Drawings as applicable to this Trade Package Scope of Work.

DIVISION 01 – GENERAL REQUIRMENTS	
GC Req.	General Requirements Manual
GC Req.	Trade Package Scope Manual
GC Req.	Trae Package General Scope Requirements
Division 01	All Division 01 Specification as Required by Samet Corporation

Primary Responsibility

This Subcontractor is responsible for all Primary Specification Responsibilities listed below unless this Scope of Work specifically states otherwise.

PRIMARY TECHNICAL SPECIFICATION RESPONSIBILITIES (PROJECT MANUAL)	
	Specifications are included on the Drawings
~~26 05 00~~	~~General Electrical~~
26 05 19	~~Building Wire and Cable~~ Low Voltage Electrical Power Conductors and Cables
26 05 26	Grounding and Bonding for Electrical Systems
26 05 29	~~Supporting Devices~~ Hangers Supports for Electrical System
26 05 33	~~Conduit~~ Raceways and Boxes for Electrical Systems

26-05-~~43~~4	Sleeves and Sleeve Seals for Electrical Raceways ~~Boxes~~
26~~-----~~05 48.16	~~Vibration and~~ Seismic Controls for Electrical Systems
26-05-53	~~Electrical~~ Identification for Electrical Systems
~~26-05-80~~	~~Equipment Wiring Systems~~
~~26-08-13~~	~~Commissioning of Electrical Systems~~
260923	Lighting Control Devices
26-24-16	Panelboards
~~26-24-21~~	~~Utility Service Entrance~~
26-27-26	Wiring Devices
~~26-27-27~~	~~Occupancy Sensors~~
26-28-13	Fuses
26-28-16	Enclosed Switches and Circuit Breakers
~~26-28-17~~	~~Enclosed Circuit Breakers~~
26-32-13	~~Diesel~~ Engine Generators
26-36-00	Transfer Switches
~~26-43-13~~	~~Surge Protection Devices~~
263613.16	Manual Transfer Switch Performance
264313	Surge Protection for Low Voltage Power Circuits
26~~-----~~51 1900	LED Interior Lighting
265619	LED Exterior Lighting
270000~~-05 10~~	Basic Telecommunications Requirements ~~Pathways~~
27052627 ~~15-00~~	~~Data and Voice Communications Circuits~~ Grounding and Bonding for Communications Systems
270528	Pathways for Communications Systems
270536	Cable Trays and Pathways for Communications Systems
270553	Identification of Communications Systems
271116	Communications Racks, Frames, and Enclosures
271513	Communications Copper Horizontal Cabling
275319	Emergency Responder Radio Antenna-Repeater System
280528	Pathways for Electronic Safety and Security
~~28-05-13~~	~~Conductors and Cables for Electronic Safety and Security~~
28-31-11	Digital, Addressable Fire-Alarm System

Secondary Responsibility

This Subcontractor is responsible for all Secondary Specification Responsibilities listed below to the extent applicable, or defined, within this Scope of Work.

SECONDARY TECHNICAL SPECIFICATION RESPONSIBILITIES	
	Specifications are included on the Drawings
GEN. NOTE	**This Subcontractor is responsible for complete Specifications package as it relates to the**

	Electrical, Communications, and Electronic Safety and Security scope of work.
Division 03	Concrete
Division 04	Masonry
Division 05	Metals
Division 07	Thermal and Moisture Protection
Division 08	Openings
Division 09	Finishes
Division 11	Equipment
Division 21	Fire Suppression
Division 22	Plumbing
Division 23	Mechanical (Heating, Ventilating, and Air Conditioning)
Division 31	Earthwork
Division 32	Exterior Improvements
Division 33	Utilities

The **Electrical, Communications, and Electronic Safety and Security Subcontractor** shall be responsible for complying with the requirements of each Scope of Work Description / Clarification Section listed below, **even if** those requirements are not shown within the Specification Sections listed above.

This Subcontractor shall be responsible for all Primary Specification Responsibilities identified above in their entirety. All costs associated with Primary Specification Responsibilities shall be included in this Subcontractor's Scope of Work and reflected in bid amount.

This Subcontractor shall be at least partially responsible for Secondary Specification Responsibilities identified above. The Secondary Specifications identify work scopes for which this Subcontractor is not wholly responsible but shall be applicable as it relates to the execution of Primary Specification Responsibilities. This may include a varying degree of responsibility from simple coordination to performing entire portions of work. The Secondary Specifications are not intended to be all inclusive and shall not limit the Subcontractor in any way with regards to installation of work identified in Primary Specification Responsibilities.

The **Electrical, Communications, and Electronic Safety and Security Subcontractor** is responsible for all Work described herein and below unless specifically noted otherwise.

See below for all safety submittals required throughout the duration of the project:

3.0 CONCRETE SCOPE OF WORK DESCRIPTION

3.0.1 Cast-In-Place Concrete - Equipment / Housekeeping pads clearly defined within the contract documents or communicated by this Subcontractor will be provided by the Concrete Foundations, Walls, & Slabs Subcontractor. This Subcontractor shall be responsible for coordination and layout of the equipment / housekeeping pads required for this scope of work.

3.0.2 Subcontractor is specifically aware of and accepts their responsibility for underground/under-slab

layout for this scope of work and will coordinate with to overlay their work with respect to the work of the other trades.

3.0.3 This Subcontractor shall coordinate any concrete or masonry penetrations and is responsible for all sleeving/conduit material for operations within its scope of work. Shall the Subcontractor fail to coordinate prior to footings, building slab, elevated slab, or masonry wall construction it will be the responsibility of this Subcontractor to provide means for proper routing of piping, conduit, or systems per the contract documents at no additional expense to the Contractor. Any penetrations after-the-fact will require coordination with the Contractor and written approval from the Structural Engineer of Record and applicable Subcontractor prior to any cutting, coring, or drilling.

3.0.4 Unless specifically noted otherwise within a Trade Package Scope of Work, all sleeves, conduit, boxes, block outs, or embeds set or cast into concrete, masonry or other work shall be furnished and installed by the Subcontractor requiring these items to complete the installation of its respective work. The set items must be secured in place to prevent movement during the proceeding activity. Additionally, these items shall be provided in a timely manner so as not to delay the concrete, masonry, or other work. In the event the Subcontractor requiring the sleeve(s) or embed(s) fails to provide them in a timely manner, the Subcontractor requiring the sleeve(s) or embed(s) will be required to bear the cost associated with cutting and patching the work to properly install the sleeve(s) or embed(s). Provide coordination drawings for openings. Include rough-opening sizes and locations for roof mounted HVAC units for coordination with the Roofing and Structural Steel Subcontractors.

3.0.5 Subcontractor shall furnish, layout, and install all UL listed sleeving at steel decking, CMU walls, shaft walls, etc. for this scope of work. All sleeving materials to be approved prior to procurement and install.

3.0.6 Cast-In-Place Concrete and Accessories – This Work shall include furnishing and installing all cast-in-place concrete and accessories, including but not limited to, all concrete materials for foundations, slabs on grade, ~~elevated Lounge slab,~~ elevated slab on metal decking (mezzanine), column block out concrete, stair landing fill, stair pan fill, concrete walls, concrete steps, steel step nosing on grade, interior concrete equipment housekeeping pads, etc. in accordance with the concrete finishes specified, concrete floor sealers, curing compounds, expansion joints, slab on grade vapor barriers, non-shrink grout, saw cut joints, water-stop, diamond dowels, smooth bar dowels , etc. as required to complete this concrete scope of work.

5.0 STRUCTURAL STEEL SCOPE OF WORK DESCRIPTION

~~5.0.1 Provide a to scale drawing providing dimensioned sizes and locations for all decking openings requiring miscellaneous framed openings during submittals for review and use by other trades as necessary.~~

5.0.2 Coordinate all routing, required clearances, and openings for this scope of work with the Structural Steel Subcontractor and General Contractor to ensure required clearances are incorporated into

Structural Steel design and shop drawings.

5.0.3 Provide scaled drawings providing dimensioned sizes and locations for all openings requiring miscellaneous framed rough openings. Subcontractor shall identify conflicts with structural and light gauge steel and communicate required openings and/or clearances. Provide these drawings and dimensions in a timely manner that will not slow the flow of submittals and production of structural steel.

7.0 THERMAL AND MOISTURE PROTECTION SCOPE OF WORK DESCRIPTION

7.0.1 Firestop Systems – This Subcontractor shall provide all necessary labor and material to ensure~~All~~ penetrations through walls, ceilings, and/or floors shall be sealed to meet or exceed the requirements of the Contract Documents and all building codes, fire codes, etc., applicable to this project. Additionally, all penetrations shall be sealed with the required firesafing or firestopping materials to meet or exceed the fire rating requirements of the applicable wall, ceiling, and/or floor assembly as acceptable to the General Contractor, Designer, and governing authorities.

7.0.2 The Electrical, Communications, and Electronic Safety and Security Subcontractor will complete all penetration firestopping and firesafing for penetrations provided as part of this Scope of Work at all walls, floor, and ceiling types. Subcontractor penetrating (HVAC, Plumbing, Electrical, Fire Protection, Security, Controls, etc.) masonry partitions shall provide properly sized sleeves or core drill penetrations within all masonry walls. All through slab firestopping and sleeves are by the Subcontractor requiring the penetration (HVAC, Plumbing, Electrical, Fire Protection, Security, Controls, etc.).

7.0.3 The installing Subcontractor must provide UL approved details for each firestopping condition. If among the specified firestop manufacturers, no approved firestop assembly exists for non-standard openings in need of firestopping, mock-ups may be required for any proposed engineering judgment designs for approval by the General Contractor, the Architect, the Owner and/or the authority having jurisdiction prior to final firestop installation. Accepted in-place mock-ups will be accepted as final work. All engineering judgements must be sealed by licensed North Carolina engineer provided by the installing Subcontractor.

7.0.4 Firestopping installers must provide proof of Factory Mutual Firm 4991 certification and approval. Work must be performed by installer who must provide evidence that they have been trained and achieved a passing score in a competency-based testing by the manufacturer whose products will be installed. All firestopping materials will be supplied by only one of the specified manufacturers. Mixing manufacturers materials will not be permitted. All subcontractors are required to use the same firestopping manufacturer. This Subcontractor shall coordinate with the Drywall, Framing, and Insulation Subcontractor and other MEP trades to ensure a single-source manufactured product is used for firestopping activities.

7.0.5 Joint Sealants - This Work shall include a complete Joint Sealant System, including but not limited to, all specified warranties, elastomeric joint sealants, solvent-release-curing joint sealants, latex

joint sealants, miscellaneous joint sealants, backing, primer, cleaners, bond breaker tape, masking tape, accessory materials, etc. Include tooling, cleaning, and protection of all sealant joints.

7.0.6 This Subcontractor shall be responsible for properly flashing all exterior penetrations made for installation of this scope of work, per this scope of work and the contract documents.

8.0 OPENINGS SCOPE OF WORK DESCRIPTION

8.0.1 This Subcontractor shall furnish and install all access doors required for this scope of work. Subcontractor shall coordinate keying with the Contractor and Owner. Access doors and panels in walls, ceilings or other surfaces shall be coordinated with subcontractors providing the substrate. Verify / coordinate a consistent manufacturer via submittal to architect via Contractor.

9.0 INTERIOR FINISHES SCOPE OF WORK DESCRIPTION

9.0.1 Subcontractor shall be responsible for any associated costs with cutting, patching, and replacement of finishes due to any repairs, errors, or omissions due to the fault of this Subcontractor. Subcontractor shall be responsible for proof of damage by others that results in cutting, patching, and replacement of finishes.

26.0 ELECTRICAL SCOPE OF WORK DESCRIPTION

26.0.1 This Subcontractor shall furnish all labor, materials, tools, taxes, insurance, equipment, hoisting, English speaking supervision, temporary utilities, and any other incidentals necessary to provide a complete Electrical Systems Package in accordance with the contract documents as well as the following clarifications.

~~26.0.2 The coordination (BIM clash detection), installation, startup, and proper operation of this scope of work is the responsibility of this Subcontractor.~~

~~26.0.3~~26.0.2 Subcontractor is to obtain all necessary approvals for this scope of work including insurance underwriters, governmental agencies, or other authorities as may be required. Subcontractor warrants that system installation is in accordance with all codes, industry standards, and good engineering practice.

~~26.0.4~~26.0.3 Codes, Permits, and Inspection - All Electrical work shall meet or exceed all applicable code requirements. Obtain and pay for all necessary permits, design review fees, and inspections associated with this work.

~~26.0.5~~26.0.4 This Subcontractor is responsible for all necessary wall or roof cutting and penetrations required for the installation of this scope of work. Subcontractor shall coordinate sequence, termination, and proper waterproofing of penetrations for this scope of work with the Contractor and associated Subcontractors.

~~26.0.6~~26.0.5 All penetrations will be sealed to meet code. Pipes, boxes, or sleeves need to be installed prior to GWB partitions being constructed to eliminate return trips by other trades. If pipes or sleeves are not installed prior to GWB partition construction, it will be this trade's responsibility to perform all patching. Coordinate install of pipes, boxes, and/or sleeves with the Contractor, Masonry, Concrete, Roofing, and Siding trade subcontractors, as necessary. If pipes, boxes, or sleeves are not installed in proper sequence with these trades as necessary to incorporate these components within the building envelope and finishes, it will be this trade's responsibility to perform all patching or repairs necessary~~.~~

~~26.0.7~~26.0.6 Provide coordination drawings for this scope of work. Coordination drawings to be overlain on other Plumbing, HVAC, Sprinkler, and Reflected Ceiling Drawings for a complete understanding of above ceiling space. If conflicts are found, during or after installation due to lack of coordination with other trades this Subcontractor shall be responsible for the associated costs. Provide and confirm locations of ceiling mounted devices.

26.0.1 Provide all testing and commissioning required for this scope of work per the requirements of the contract documents.

~~26.0.8~~26.0.7 Subcontractor shall be responsible for verifying all requirements and coordinate the exact location of incoming power with the local power company Duke Energy. It shall be this Subcontractor's responsibility to notify the Engineer of Record via the General Contractor should any changes be required.

~~26.0.9~~26.0.8 Electrical System – This Work shall include providing a complete Electrical, Fire Alarm, Security & Structural Cabling package as defined within this Scope of Work, the contract documents related to the Site & Building Electrical, Fire Alarm, Security & Structural Cabling & Telecommunications, Grounding, Lightning Protection, testing, work of this project.

~~26.0.10~~26.0.9 General - This Work shall include a complete Electrical, Fire Alarm, Security System, and Structural Cabling System, including but not limited to, permits, shop drawings, excavation, trenching, backfilling, compaction, warning tape, cleaning, painting, where required, labels, electrical materials, installation and operating instructions, equipment connections, O & M Manuals, Certificates, sleeves, floor, wall and ceiling access doors and plates, etc., as required to provide a complete functional Site & Building Electrical, Fire Alarm, Security & Structural Cabling System for this project approved by the local or state governing authority.

~~26.0.11~~26.0.10 Electrical, Fire Alarm, Security, and Structural Cabling Work - This Work shall include providing all Electrical, Fire Alarm, Security, and Structural Cabling work including but not limited to, all designated empty conduits with pull strings serving various electrical systems, new service feeders and conduit, telecommunication duct banks, maintenance holes (Cast-in-place or Precast), hand holes, site lighting conduit, flagpole site lighting, future EV charging stations, security system, security cameras, data system, fire main and domestic water hot box heat tape and circuits, primary service feeders, secondary service feeders, wiring, cabling, conduit, junction boxes, pull boxes, accessories and other incidental items to complete all Electrical, Fire Alarm, Security, and Structural

Cabling work designated within the Contract Documents.

~~26.0.12~~26.0.11 Where specified for this Scope, provide all exterior lighting fixtures including, but not limited to pole mounted fixtures, bollard fixtures, surface mounted fixtures, ground recessed fixtures, GFI receptacles, pole bases as required or specified, per the contract documents.

~~26.0.13~~26.0.12 Main Service Switchboard - This Work shall include complete main service switchboard, including but shall not be limited to, connections to factory assembled service entrance switchboard with bussing, switches, fuses, ground fault protection system, etc. per the contract documents. Conduits and feeders shall be run as designed and per the contract documents. Subcontractor shall coordinate the exact MCA/MOCP requirements of all equipment with other trades and General Contractor prior to ordering and installing any electrical switchboard or associated panel boards.

~~26.0.14~~26.0.13 Lighting and Power Panel Boards - This Work shall include a complete Lighting and Power Panel Board System, including but shall not be limited to, frames, panels, circuit breakers, bus bar connections, cabinets, wiring, typewritten circuit identification, etc. per the contract documents.

~~26.0.15~~26.0.14 Lightning Protection System – Provide a complete and certified lightning protection system per the contract documents.

~~26.0.16~~26.0.15 Fuses - This Work shall include a complete Fuse System with spare fuse cabinet, per the contract documents.

~~26.0.17~~26.0.16 Raceways - This Work shall include a complete Conduit System, including but shall not be limited to, power poles, cable tray, j-hooks, metallic conduit, electric metallic tubing, galvanized rigid steel conduit, rigid PVC conduit, plastic conduit, fittings, couplings, connectors, insulated bushings, etc. as specified within the Contract Documents and as required by code. Pull strings shall be provided for all spare or future conduits by this Subcontractor as specified. Subcontractor has included turnkey conduit as required for power to systems provided by other trade subcontractors.

~~26.0.18~~26.0.17 Conductors - This Work shall include a complete Conductor System, including but shall not be limited to, conductors and ground wires, conductor insulation, wire, cables, color coding, etc. per the contract documents.

~~26.0.19~~26.0.18 Busways - This Work shall include a complete Busway System, including but shall not be limited to, conductor bus bars, electrical insulators, enclosures, flanges, elbows, offsets, tees, cable tap boxes, weather heads, transformer connections, power take off sections, reducers, expansion joints, end enclosures, accessories and other components to comprise a complete bus bar system.

~~26.0.20~~26.0.19 Outlets and Device Plates - This Work shall include a complete Outlet and Device Plate System, including but shall not be limited to, cast metal type outlets, plaster rings, floor boxes, covers including blank cover plates over all existing device boxes not being reused and/or abandoned within an existing wall assembly, etc.

~~26.0.21~~26.0.20 Wiring Devices and Device Plates - This Work shall include a complete Device and Device Plate System, including but shall not be limited to, switches, receptacles, device plates including blank plates over all boxes not in use, floor boxes and devices, etc.

~~26.0.22~~26.0.21 Lighting Fixtures and Lamps - This Work shall include a complete Lighting Fixture and Lamp System, including but shall not be limited to, fixtures, lamps, ballasts, fixture supports, etc. This Subcontractor shall provide re-lamping of light fixtures in accordance with contract documents and prior to Owner Final Acceptance and Occupancy as directed by the General Contractor.

~~26.0.23~~26.0.22 Disconnect Switches - This Work shall include a complete Disconnect Switch System, including but not limited to disconnect switches, toggle switches, fuses, etc. Include padlocks and keys for disconnect switches, if applicable, serving designated equipment.

~~26.0.24~~26.0.23 Starters and Controls – Subcontractor shall mount starters furnished by the HVAC and Plumbing subcontractors, the Electrical subcontractor provides all safety switches, wiring, and connections to line side and load side of starters and safety switches complete to HVAC and Plumbing equipment. For resistance type loads where starters or contactors are not required, the Electrical Subcontractor shall provide all power wiring and connections complete to equipment.

~~26.0.25~~26.0.24 Dry Type Transformers - This Work shall include a complete Dry Transformer System, including but shall not be limited to, dry type transformers with enclosures, insulation, electrostatic shields, etc. per the contract documents.

~~26.0.26~~26.0.25 Pull Boxes, Junction Boxes and Fittings - This Work shall include a complete Pull Box, Junction Box and Fitting System per the contract documents.

~~26.0.27~~26.0.26 Grounding and Bonding - This Work shall include a complete Grounding and Bonding System, including but shall not be limited to ground rods, connections, chemical welds, grounding of all motors and electrical equipment, communication systems, etc. as specified by the Contract Documents. Subcontractor shall coordinate specific grounding and bonding requirements with the Contractor and associated trade subcontractors.

~~26.0.28~~26.0.27 Equipment Identification - This Work shall include a complete Equipment Identification System, including but shall not be limited to, all engraved laminated plastic plates, directory frames and directory cards, etc. per the contract documents and AHJ. Engraved laminated plastic plates shall identify all electric apparatus. Also, all circuits shall have typewritten identification.

~~26.0.29~~26.0.28 Plywood Backboards – This Work shall include providing and installing all required fire treated plywood backboards in phone and data areas per the Contract Documents.

~~26.0.30~~26.0.29 Subcontractor shall provide electrical service to and final electrical connection of food service equipment for complete operating installation.

~~26.0.31~~26.0.30 Building systems will be made operational to perform other trade's work at no additional

costs to the General Contractor or Owner to maintain the specified warranties/guarantees. This trade shall provide all service and maintenance.

~~26.0.32~~26.0.31 Electrical Supporting Devices - This Work shall include providing all electrical related supporting devices, including but shall not be limited to, hangers and supports, seismic hangers and supports, hanger saddles, vibration isolation hangers, and miscellaneous structural steel supports and/or angle frame supports which are needed to support equipment provided by this Subcontract, whether reflected or not within the Contract Documents and which are not specifically designated to be provided by another Subcontractor. Subcontractor shall be responsible for obtaining written approval for all attachments (i.e. beam clamps, all thread hangers, uni-strut, clamps, braces, etc.) to other Subcontractors work prior to commencing with the installation of said attachments. Failure to obtain written approval from the respective Subcontractor and/or Designer may result in the Contractor's rejection of the installation(s). Also install all hanging wires, supports, etc. to meet seismic requirements, where required by the technical specifications and/or governing code for all equipment, etc. provided as part of this Scope of Work, where specific equipment, etc. is scheduled within an acoustical paneled ceiling system, suspended gypsum ceiling system and/or at an exposed structure condition.

~~26.0.33 Building Automation System - This Work shall include providing a complete Building Automation System, Direct Digital Control System, Energy Management and Measurement System for the Heating, Ventilating, and Air Conditioning systems including but not limited to, wire, conduit and junction boxes at applicable building locations (reference following paragraph for further clarification), control devices, control cabinets, networking and software interface capability, installation of duct mounted smoke detectors furnished by this Subcontractor, personal computer work stations, fire stats, thermostats, contacts, pressure sensors, pressure transmitter, temperature sensors, control valves, dampers and actuators, network terminal, software, DDC panels, digital controllers, testing, guarantees, maintenance and training and all other requirements to provide the Owner with a complete and operational system as specified within the Contract Documents.~~

~~26.0.34~~26.0.32 This Subcontractor shall provide timely electrical service to and final connections for the HVAC equipment required to properly condition the building to accommodate the installation of the building's interior finishes. This work shall be accomplished so this equipment can be made permanently operational by no later than ten (10) calendar days prior to the commencement of the finishes within the building.

~~26.0.35~~26.0.33 Lighting Control System- This Work shall include providing a complete direct Digital Lighting Control for the designated lighting systems, including but not limited to, wire, conduit and junction boxes at applicable building locations (reference following paragraph for further clarification), control devices, control cabinets, networking and software interface capability, personal computer work stations, network terminal, software, DDC panels, digital controllers, testing, guarantees, maintenance and training and all other requirements to provide the Owner with a complete and operational system as specified within the contract documents. Subcontractor is fully responsible for the interfacing and integration of the Lighting Control Systems with the BAS.

~~26.0.36~~26.0.34 Control Wiring Conduit (masonry/drywall partition wall) Rough-ins - The Electrical, Fire Alarm, Security & Structural Cabling Subcontractor is responsible for furnishing and installing all in wall (masonry and drywall/metal stud wall assemblies) rough-in EMT conduit, miscellaneous device plates, device boxes, junction boxes and associated accessories to accommodate the HVAC control, Building Automation, Energy Measurement, Management Systems, Lighting Controls, Building Dashboard, etc. The extent of the installation shall be limited to installations within wall assemblies with conduits extending a minimum of six (6) inches from the face and/or top of the wall above the finish ceiling for future connection. Lighting Controls and low voltage wiring shall be provided by this Subcontractor. During the submittal phase of the project, the HVAC Subcontractor will provide all in wall rough-in locations to this Subcontractor.

~~26.0.37~~26.0.35 Subcontractor shall coordinate this work with the HVAC Subcontractor, Masonry Subcontractor, Drywall, Metal Studs & Insulation Subcontractor, and General Contractor so that no adverse schedule delay occurs. It is this Subcontractor's responsibility to ascertain the quantity and cost of all in wall HVAC related wiring conduit and junction box drops included within this scope of work. Reference the Mechanical and Electrical contract documents for additional information and locations.

~~26.0.38~~26.0.36 Subcontractor shall provide electrical power to all heat tape provided and installed by others.

~~26.0.39~~26.0.37 Subcontractor responsible for all wiring and conduit to the vehicle exhaust system ~~SafeAir~~ control panel, per the contract documents. Vehicle exhaust ~~SafeAir~~ system supplied and installed by the Owner.

~~26.0.40~~26.0.38 Subcontractor will provide electrical service to and final connections for tamper switches, flow switches, alarm bell, and other electrical devices provided by the Fire Protection Subcontractor.

~~26.0.41~~26.0.39 Subcontractor shall provide electrical service to and final connections for all HVAC equipment, etc. provided by the HVAC Subcontractor and Owner, per the contract documents.

~~26.0.42~~26.0.40 Subcontractor shall provide electrical service to and final connections for plumbing equipment, plumbing fixtures, water heaters, etc. provided by the Plumbing Subcontractor, per the contract documents.

~~26.0.43~~26.0.41 Include power for all overhead doors even if power isn't shown on electrical drawings. Refer to Architectural drawings for locations; coordinate all work with Overhead Door Subcontractor and General Contractor.

~~26.0.44~~26.0.42 This Subcontractor shall include cut outs and mounting for devices in ceiling tile required to complete this Scope of Work.

~~26.0.45~~26.0.43 Subcontractor will provide and maintain a complete temporary power and lighting service including, but not limited to service power pole, distribution panels, lights, boxes, conduit, final connections, maintenance, re-lamping, etc. within the building and other incidentals necessary to furnish and install a temporary power supply to service the Construction at General Contractor's request.

~~26.0.46~~26.0.44 Diesel Generator – This Subcontractor shall furnish and install a complete generator package per the contract documents. Generator package should include all materials, installation, start-up, testing, UL listings, associated specification requirements, associated gear and switching, sound attenuated enclosure, vibration isolation, fuel tanks (including fuel), batteries, alternators, cooling systems, controllers, overcurrent and fault protection, electronics, solid state breakers (including spares), jacket water heaters, guard systems, fuel oil cooler, exhaust manifold and turbo charger blankets, alarm and lamp indicator systems as specified, gauges and gauge panels, accessories, full tank of diesel, etc. This Subcontractor shall provide all required Owner training and maintenance periods as specified.

~~26.0.47 EV Charging Stations – Provide and install distribution with conduit and wiring for future EV Charging stations, per the contract documents.~~

~~26.0.48~~26.0.45 The HVAC, Plumbing, Fire Protection, and Electrical Subcontractors shall coordinate their work closely with each other and the Drywall/Acoustical Ceilings Subcontractor as to provide /confirm locations of their ceiling mounted devices. The Plumbing Subcontractor is to meet with and coordinate with the Electrical, HVAC, Utility Piping, and the Fire Protection Subcontractor, to ensure that between the four subcontractors, all items whether Electrical, Plumbing, HVAC, Utility Piping, or Fire Protection related will be provided as needed and that the installation of any items will be completed by one or the other Subcontractors without any additional expense to the General Contractor or Owner.

~~26.0.49~~26.0.46 This Subcontractor is to meet with and coordinate with the HVAC, Plumbing, Utility Piping, Fire Protection, Overhead Door, Hollow Metal Door Frame & Hardware, Storefront, etc. Subcontractors to ensure that a complete system will be provided as designed and that the installation of any ancillary items will be completed by one or the other Subcontractors without any additional expense to the Construction Manager or Owner.

~~26.0.50~~26.0.47 This Subcontractor has included turnkey supply and install of emergency push buttons and timers for applicable natural gas appliances.

~~26.0.51~~26.0.48 This Subcontractor has included adequate temporary power with final connections for the Contractor's office trailer(s). This includes all heat traces as necessary on all trailer MEPF components to prevent freezing.

~~26.0.52~~26.0.49 Subcontractor has included all applicable connections to all related components involving the fire sprinkler system, HVAC system, and electrical system, including alarms, switches, tampers, shutdowns, dampers, etc., as well as any other related scopes of work.

27.0 COMMUNICATIONS

27.0.1 Structured Cable – This Work includes a complete and operational Data and Voice Communications System including but is not limited to multi pair horizontal cabling, wiring, telecommunications closets builds, data relay rack frames, pre-finished backboards, vertical wire management, data outlet jacks, raceways, ladder trays, j-hook pathways, data outlets jacks, patch panels, patch cables, interior cables, wireless access point outlets, termination and testing, grounding system, backbone cabling, backboxes, conduit, cable tray, penetrations, and pathways per the contract documents.

27.0.2 Subcontractor shall furnish and install individual and combination telecommunications/data outlets, per the contract documents.

27.0.3 Subcontractor shall furnish and install termination devices, racks, and premises wiring for telephone and data communication circuits by certified manufacturers and contract installers with certification and testing of all equipment and cabling.

28.0 ELECTRONIC SAFETY AND SECURITY

28.0.1 Fire Alarm System – This Work includes a complete pathway, cabling, and operational Fire Alarm system including but is not limited to FACP, control panels, addressable interface device, digital alarm communicator transmitter, conduit, wiring, cabling, manual stations, remote annunciator, annunciators, batteries and battery back-ups, boosters, input and output modules, relays, recalls, signal devices, notification appliances, strobes, horns, magnetic door holders, pull stations, smoke detectors, heat detectors, duct detectors, hot box temperature sensor, certification, testing, BDA/ERRC monitoring including bypass key and power, etc. per the contract documents. Include Emergency Responder Radio Coverage system to be fully integrated as part of the Fire Alarm system as required by the AHJ and contract documents.

28.0.2 Subcontractor has included conduit, wiring, junction boxes, and final connections for monitoring of the fire service PIVs and applicable water service components.

28.0.3 Subcontractor shall provide interface and connections for HVAC unit shutdown where required per the contract documents and authorities having jurisdiction. This Subcontractor agrees that it is its own responsibility to coordinate all such connections with the HVAC Subcontractor and General Contractor prior to installation.

28.0.4 Subcontractor shall provide low voltage surge protectors and high voltage surge protectors for each fire alarm panel, per the contract documents.

28.0.5 Subcontractor shall furnish and install all fire alarm components with applicable UL ratings per the contract documents, approved submittals, and authority having jurisdiction.

28.0.6 Subcontractor shall schedule, with applicable local and state officials and/or agencies, a final inspection of the fire alarm system no later than two (2) weeks prior to the time the system is scheduled to be placed into operation.

28.0.7 BDA/Emergency Responder Radio Coverage – Subcontractor has included initial survey at two (2) separate times during construction.

28.0.8 Subcontractor has included 2" conduit for dedicated phone line for fire protection dialer and backup line from exterior cabinet to FACP.

28.0.9 Subcontractor shall coordinate all necessary power requirements with the General Contractor and Electrical Subcontractor for this scope of work.

28.0.10 Subcontractor will coordinate, cooperate, and work with the Fire Protection, HVAC, and Electrical subcontractors with regards to overlapping scopes of work throughout the duration of the project.

28.0.11 Subcontractor is responsible for providing all signage and/or permanent identification applicable to its scope of work required to be considered in compliance with all local, state, and federal regulations/codes.

28.0.12 Subcontractor shall coordinate any rated partition, steel, concrete, or masonry penetrations and is responsible for all sleeving material for operations within its scope of work. Shall this Subcontractor fail to coordinate prior to execution of work by others, it will be the responsibility of this Subcontractor to provide means for proper routing of their system per the contract documents at no additional expense to the General Contractor. Any penetrations after-the-fact will require coordination with the Contractor and written approval prior to any cutting, coring, or drilling.

28.0.13 Subcontractor shall provide training and support for Owner and end user per the contract documents.

28.0.14 Subcontractor shall perform all programing and commissioning necessary for turnkey operation of this scope of work in coordination with the Owner and property management.

28.0.15 Security System - This Work shall include a ~~complete~~ security system, including but not limited to, access control, intercom communication system, uninterrupted power system, interfaces, wire and cable, conduit, junction boxes, back boxes, detection devices, control panels, power supply, software~~, key readers~~, testing, accessories, etc. to comprise a complete security system. Access control devices and cabling to be provided and installed by owner (Reference Telecom Drawings).

28.0.16 Operable Doors/Electronic Hardware -- Step down transformers, micro switches, card readers, control wiring, and battery back-up, etc. shall be provided by this Subcontractor. Subcontractor shall supply and install all conduit rough-ins, junction boxes, power hookups, etc. for all electrically operated and control hardware, auto door operators, strike, operator, etc. Coordinate requirements and quantity with the Contract Documents. This Subcontractor shall coordinate and

work with the Hollow Metal Door, Frame, and Hardware and Storefront Subcontractors to ensure complete and proper operation of all door and security systems.

31.0 SITEWORK SCOPE OF WORK DESCRIPTION

31.0.1 This Subcontractor is responsible for all Work described herein and below unless specifically noted otherwise to be part of another Subcontractor's Scope of Work. If for some reason an item of scope is included inadvertently in this scope of work and another trade package scope of work, this Subcontractor shall be responsible for including the subject scope of work within its base bid proposal.

31.0.2 Excavation, Trenching, Backfilling, Fine Grading and Compaction - This Work shall include, but not be limited to, all excavation, trenching, backfilling, fine grading, shoring and bracing, where required, pumping and dewatering, if required, and compaction work associated with the proper installation of all work required of this Subcontract. Excess excavated material shall be moved to a location specified by the Construction Manager.

31.0.3 Site Electrical Work - This work shall include providing all site electrical work and conduit with pull strings, including but not limited to, primary and secondary service feeders and conductors, utility provided site lighting~~, sewage pump station~~, well pump, fire pump, exterior signage, flagpole lighting, fire main and domestic water hot box heat tape and circuits, ~~future EV charging stations,~~ diesel generator with transfer switch, temp power and lighting, telephone and data service provider, etc. with associated duct bank concrete, wiring, cabling, conduit, junction boxes, pull boxes, accessories and other incidental items to complete all site electrical work designated within the Contract Documents or Design Criteria Narrative.

31.0.4 Site Lighting - Provide and install all conduit for Duke Energy provided site lighting package, per the Contract Documents and Duke's specifications. Subcontractor to coordinate this work with Contractor and Duke.

31.0.5 Site Utilities Electrical and Communication Work – This Work shall include final wiring of all site utility related electrical items. This includes, but is not limited to, all tamper switches, flow switches, pump alarms, sump pump controls and power, heat traces, hotbox heaters, RPZ and backflow heating elements and switches, associated conduits/wireways, final connections, integration with fire alarm and other control panels, etc. Provide 4-inch diameter conduits from the property line demark point to the building service backboard location in Demarc Room as approved by the local telephone/ fiber utility. Provide hand holes for pulling every 300'-0" and at every 180 degrees of offsets in run or as required by Utility Company.

—OTHER SCHEDULE SUMMARY INFORMATION—

The Substantial Completion date for the Electrical Subcontractor is as reflected within the Construction Schedule. Special attention should be directed to the Construction Schedule for project sequencing requirements which are a requirement of this Scope of Work.

END OF SECTION
TRADE PACKAGE SCOPE OF WORK:
26A ELECTRICAL, 27A COMMUNICATIONS, AND 28A ELECTRONIC SAFETY & SECURITY SUBCONTRACT

TRADE PACKAGE SCOPE OF WORK

31A, 32A, & 33A – EARTHWORK, EXTERIOR IMPROVEMENTS, & UTILITIES SUBCONTRACT

Furnish all labor, materials, tools, taxes, safety, insurances, equipment, hoisting, cranes, supervision, and all other incidentals necessary to accomplish all **Earthwork, Exterior Improvements, & Utilities Package** Work in accordance with all Contract Documents and as defined within **Trade Package General Scope Requirements** and this Scope of Work.

Subcontractors/Suppliers performing work on multiple portions of the project site (i.e., buildings, parking area, site, etc.) shall provide separate equipment, hoisting, cranes, full-time English-speaking supervision including, but not limited to management, superintendent, on site foreman, tradesman, laborers, etc. for each portion unless agreed to otherwise in writing by the General Contractor. If the project needs and schedule are not being met to the satisfaction of the General Contractor, written approval will be rescinded, and the original staffing requirements shall be provided by the Subcontractor.

Project Specifications for the **Earthwork, Exterior Improvements, & Utilities Package** Scope of Work are listed below. This Subcontractor or Supplier shall carefully examine all specification sections and drawings within the Contract Documents and be responsible for all work described within this Scope of Work and as required on the project.

PROJECT SPECIFICATIONS

This Subcontractor is responsible for all Division 01 - General Requirements prepared by the Architect, Design Consultants, and/or General Contractor or as designated elsewhere within the Technical Specifications or Drawings as applicable to this Trade Package Scope of Work.

DIVISION 01 – GENERAL REQUIRMENTS	
GC Req.	General Requirements Manual
GC Req.	Trade Package Scope Manual
GC Req.	Trae Package General Scope Requirements
Division 01	All Division 01 Specification as Required by Samet Corporation

Primary Responsibility

This Subcontractor is responsible for all Primary Specification Responsibilities listed below unless this Scope of Work specifically states otherwise.

PRIMARY TECHNICAL SPECIFICATION RESPONSIBILITIES (PROJECT MANUAL)	
	Specifications are included on the Drawings
012000	General Sitework Requirements
079200	Joint Sealants
31-20-00	Earthwork
31-25-00	Erosion Control
32-12-16	Asphalt Pavement

32-13-13	Site Concrete
32-17-00	Pavement Markings, Signs and Specialties
33-10-00	Exterior Water System
33-30-00	Sanitary Sewerage
~~33 32 00~~	~~Grinder Pump Station~~
333216	Package Utility Wastewater Pumping Stations
33-41-00	Storm Drainage

Secondary Responsibility

This Subcontractor is responsible for all Secondary Specification Responsibilities listed below to the extent applicable, or defined, within this Scope of Work.

SECONDARY TECHNICAL SPECIFICATION RESPONSIBILITIES	
Gen. Note	**This Subcontractor is responsible for complete Specifications package as it relates to the Earthwork, Exterior Improvements, & Utilities scope of work.**
Division 03	Concrete
Division 21	Fire Suppression
Division 22	Plumbing
Division 23	Mechanical
Division 26	Electrical
Division 31	Earthwork
Division 32	Exterior Improvements

The **Earthwork, Exterior Improvements, & Utilities** Subcontractor shall be responsible for complying with the requirements of each Scope of Work Description / Clarification Section listed below, **even if** those requirements are not shown within the Specification Sections listed above.

This Subcontractor shall be responsible for all Primary Specification Responsibilities identified above in their entirety. All costs associated with Primary Specification Responsibilities shall be included in this Subcontractor's Scope of Work and reflected in bid amount.

This Subcontractor shall be at least partially responsible for Secondary Specification Responsibilities identified above. The Secondary Specifications identify work scopes for which this Subcontractor is not wholly responsible but shall be applicable as it relates to the execution of Primary Specification Responsibilities. This may include a varying degree of responsibility from simple coordination to performing entire portions of work. The Secondary Specifications are not intended to be all inclusive and shall not limit the Subcontractor in any way with regards to installation of work identified in Primary Specification Responsibilities.

The **Earthwork, Exterior Improvements, & Utilities** Subcontractor is responsible for all Work described herein and below unless specifically noted otherwise.

See below for all safety submittals required throughout the duration of the project:

SURVEYING

2.0.1 This Subcontractor is responsible for all Surveying work related to this scope of work required by the contract documents as well as herein and below unless specifically noted otherwise to be part of another Subcontractor's Scope of Work. Includes as-builts for this scope of work as required by the contract documents and AHJ.

2.0.2 This Subcontractor is responsible for all layout work, field engineering including vertical control, providing and maintaining lines and batter boards, protection of survey pins provided by others and coordination between its Subcontractors and other on-site subcontractors for all aspects covered under this Scope of Work. Initial ~~building corners and~~ control points will be established by the Contractor for use by this Subcontractor to complete this Scope of Work. This subcontractor is responsible for initial building corners per contract documents.

2.0.3 Subcontractor shall utilize the services of a Professional Licensed Surveyor to establish control of the site.

2.0.4 The surveying scope of this project includes but is not limited to all layout, grade staking, and field engineering necessary to build the civil portion of the project. Subcontractor shall demonstrate the accuracy of the control and shall be ultimately responsible for its correctness for the duration of the project.

2.0.5 For duration of the project, Subcontractor shall establish, maintain, and verify correct horizontal and vertical control of the site and place benchmarks where visible for use by others.

2.0.6 This scope includes the location and staking of all civil components, including but not limited to LOD, silt fence, tree protection, ponds, sediment traps, setbacks, offsets, site grades, site paving, site stormwater system components, flag poles, all wet / dry utility installations etc. as it pertains to this scope of work per the contract documents.

2.0.7 Subcontractor shall assume reasonable responsibility of protecting these stakes and restoring the same if any stakes are damaged, removed, stolen, relocated, etc. at no additional cost.

2.0.8 Includes certification of building pad elevation(s). Building pad acceptance shall be based on verification of the building pad elevations by this Subcontractor via the certification process.

31.0 MASS / FINE GRADING SCOPE OF WORK

31.0.1 This Subcontractor is responsible for all earthwork required by the contract documents as well as herein and below unless specifically noted otherwise to be part of another Subcontractor's Scope of Work.

31.0.2 This Subcontractor shall provide a 15ft x 22ft level pad with adequate gravel and/or base for the Contractor's temporary jobsite trailer at no additional cost to the Contractor. The location of the trailer pad will be determined between the Contractor and Subcontractor onsite.

31.0.3 Verification of Grading Design - Subcontractor has verified that the finished grades set forth in the contract documents allow for positive drainage as intended.~~, including the spoils from the work of others, reflect an export site and that no additional cost will arise out of necessary export of usable soils.~~

31.0.4 Verification of Existing Grades - This Subcontractor shall assume all responsibility for determining if existing grades/contours are in conformance with the information reflected within the Contract Documents. Contractor shall be notified in writing of the Subcontractor's acceptance or rejection of the existing topographical information prior to commencement of any grading operations. Failure to check the existing contours, etc., and once the site work grading operations begin shall forfeit Subcontractor's right to make any claim for existing conditions which may differ from those outlined within the contract documents.

31.0.5 ~~Clearing and Grubbing - This Work shall include but not be limited to, all layout, tree marking, protection of trees throughout the duration of the site work, tree removal, vegetation removal, topsoil removal and stockpiling at area designated by Contractor, clearing and grubbing work, demolition, tree protection fencing at all designated sites. Unless advised otherwise by Contractor, all resultant debris generated during the clearing and grubbing process including all trees, stumps, vegetation, etc. shall be removed and disposed of off-site at the cost of this Subcontractor.~~

~~31.0.6 Topsoil - This Work shall include, but not be limited to, stockpiling all stripped topsoil in a location(s) determined by Contractor and contract documents. This Subcontractor will redistribute/respread topsoil in all open/common areas. Subcontractor shall remove excess from the site as directed by the Contractor.~~

~~31.0.7~~31.0.6 Earthwork - This Work shall include all earthwork and site grading work, including but not limited to, all topsoil stripping, storing, curb and gutter, paving, building slab backfill, cutting and filling, rough grading, surface roughening, and dust control measures, along with all minor dewatering work as required to maintain the Project Construction Schedule. It is understood that while screening of topsoil is excluded, no rocks or gravel larger than 2" shall remain in seeded and or landscaped areas.

~~31.0.8~~31.0.7 Coordinate final grades with follow-on subcontractors where required including but not limited to: Irrigation and Landscaping, Concrete Foundations Walls and Slabs, Concrete Paving, and others where subgrade coordination is required.

~~31.0.9~~31.0.8 Subgrade/Final Grade Preparation - This Work shall include, but not be limited to, cutting, filling, compacting, and grading work necessary to accommodate all asphalt and concrete paved areas including light duty and heavy duty asphalt paved drives/parking areas, etc., concrete sidewalks, concrete medians/islands, site concrete pads, building concrete slabs, etc. to the underside of the concrete slab/pad base course, concrete sidewalk, or applicable graded aggregate base (GAB) course.

~~31.0.10~~31.0.9 Final grades shall be to within plus or minus one tenth of one foot for each system's subgrade elevation and/or finished grade elevation depending upon the work requirement (most stringent of specifications shall govern). Subcontractor shall coordinate with the Contractor and associated Subcontractors.

~~31.0.11~~31.0.10 Excavation, Trenching, Backfilling, Fine Grading, & Compaction - This Work shall include, but not be limited to, all excavation, trenching, backfilling, fine grading, shoring, and bracing, where required, compaction work associated with the proper installation of all work required of this Subcontract. and all minor dewatering work as required to maintain the Project Construction Schedule and complete this Scope of Work. Heavy groundwater dewatering is excluded. All excavation, trenching, backfilling, fine grading, and compaction work shall be completed in accordance with the use of safe excavation practices, governed by the Occupational Safety and Health Administration (OSHA).

~~31.0.12~~31.0.11 In all areas receiving fill materials, the soil shall be proof rolled and approved by the 3rd Party Geotech prior to the placement of any fill material. All fill material is to be tested and compaction approved as the work is placed and completed. All fill shall be compacted as required by the contract documents and the local governing authority.

~~31.0.13~~31.0.12 Prior to use, borrow material, if required, must be approved by the 3rd Party Geotech designated for the project.

~~31.0.14~~31.0.13 Advanced preventive measures to anticipate rainfall and then minor dewatering work as required to maintain the Project Construction Schedule and complete this Scope of Work are included in this Subcontract. Dewatering to be completed immediately after weather events.

~~31.0.15~~31.0.14 Fill that is too wet for proper compaction shall be disked, harrowed, or otherwise dried to a proper moisture content for compaction to the required density. If the fill material cannot be dried as needed to maintain the project schedule, it shall be removed and replaced with drier fill ~~or reconditioned with lime~~ per approved Unit Prices and 3rd Party Geotech's recommendations. If drying operations result in a stoppage in production, it may be determined that drying efforts shall continue and be paid as part of an allowance per approved drying unit rates.

~~31.0.16~~31.0.15 Fill that is too dry for proper compaction shall be wetted to achieve the required moisture content for compaction to the required density, per the contract documents and 3rd Party Geotech. Subcontractor has included the necessary measures to wet fill soils as necessary per the 3rd Party Geotech.

~~31.0.17~~31.0.16 This Subcontractor shall leave all areas of the project in a condition that will naturally drain. If water accumulates, this Subcontractor shall be responsible for dewatering as required to maintain the Construction Schedule at no additional cost. Additionally, as a wet weather prevention measure, this Subcontractor shall compact, drum roll and slick off all work areas each day with a slick drum roller to seal off the graded substrate to help keep water from penetrating into the soil which may impede construction work due to inclement weather.

~~31.0.18~~31.0.17 This Subcontractor is responsible for removing spoils generated by other trades. Any trades generating spoils will locate them to a single central location designated by Contractor for use on-site or removal by this Subcontractor.

~~31.0.19~~31.0.18 Dust and Mud Control – While onsite, this subcontractor shall provide water truck equipment and associated manpower as required by Contractor, 3rd Party Geotech, OSHA, or Owner to ensure that dust and/or mud is properly controlled on the project site.

~~31.0.20 Classified and Unclassified Portions of the Sitework – below is a summary of the responsibilities associated with potential sitework variables. The term Classified means that variables leading to additional work shall be the responsibility of the Owner through the Contractor. The term Unclassified means any variables leading to additional work shall be the responsibility of the Subcontractor at no additional cost to the Owner or the General Contractor:~~

~~i. Groundwater - Classified~~
~~ii. Undercut of In-situ Material beyond the scope of Contract Scope– Classified~~
~~iii. Unsuitable Soils not Suitable for Fill – Classified~~
~~iv. Mass Rock, Rib rock and trench rock – Classified.~~

EROSION & SEDIMENT CONTROL / TEMP SEEDING SCOPE OF WORK

~~31.0.21~~31.0.19 This Subcontractor is responsible for all Work described in the contract documents as well as herein and below unless specifically noted otherwise to be part of another Subcontractor's Scope of Work.

~~31.0.22~~31.0.20 Subcontractor shall have on staff or shall hire a properly credentialed SWPPP technician to ensure compliance with all State stormwater regulations and to conduct regular inspections for the duration of the stormwater permit. Inspections by Subcontractor / reporting by Contractor.

~~31.0.23~~31.0.21 This Work shall include, but not be limited to, providing, installing, maintaining for the duration of the project, and removing - all sediment barriers, silt fencing, diversion ditches, silt sacks, temporary filter berm basin, inlet sediment traps, baffles. limits of disturbance, storm drain outlet protection items, temporary seeding or permanent seeding/sodding of all disturbed areas due to installation of this scope, construction edifices, and temporary construction entrance/exits. ALL REQUIRED EROSION CONTROL MEASURES (I.E. SILT FENCING, TEMP SEDIMENT TRAPS, ETC.) SHALL BE INSTALLED PRIOR TO COMMENCING WITH ON-SITE GRADING OPERATIONS. Comply with all NCDEQ and other AHJ (New Hanover County~~City of Wilmington~~, NCDOT, etc.) requirements as needed to perform this work. Includes removal of all temporary erosion control materials from the site when AHJ(s) permits removal.

~~31.0.24~~31.0.22 All silt fence posts will have impalement protection caps installed for the length of their service life.

~~31.0.25~~31.0.23 This Subcontractor shall be responsible for ensuring the adjacent roadways are kept free of

mud and debris, during execution of this scope of work. River Road shall be kept to the satisfaction of Contractor and/or the local governing authority associated with the project while this subcontractor is onsite.

~~31.0.26~~31.0.24 This Subcontractor shall be responsible for temporary seeding and stabilizing ~~tacking~~ all disturbed areas in accordance with the contract documents. ~~seeding schedule provided in the plans and specifications~~. All seeding, matting, mulching, and tacking shall take place as soon as possible and as governed per NCDEQ requirements.

~~31.0.27~~31.0.25 This Subcontractor shall fine grade all affected areas that are damaged due to removing the erosion control devices, silt accumulation, etc. to receive permanent grassing by the Landscaping and Irrigation Subcontractor. Coordinate as required with Landscaping and Irrigation subcontractors as required for meeting required finish grades at all areas.

~~31.0.28~~31.0.26 This Subcontractor shall be responsible for providing, installing, maintaining, and removing all concrete waste and wash-out facilities ~~per the plans and specifications~~. This scope shall include, but not be limited to, all sheeting, sandbagging, liners, excavations, signage, and maintenance of all such materials for the duration of the project. This area will be removed prior to substantial completion.

~~31.0.29~~31.0.27 Construction entrances shall be installed and maintained by this Subcontractor until such time they must be removed, per the contract documents. Removal is also by this Subcontractor.

32.0 ASPHALT PAVING SCOPE OF WORK

32.0.1 Fine Grading - This Work shall include, but not be limited to, fine grading of all subgrade and stone base as required for this scope of work, per the contract documents.

32.0.2 Stone Base – This work shall include, but not be limited to, furnishing, and installing all stone base including hauling, placement, roll-in, compaction, grading, and maintaining stone base for asphalt, concrete paving, and curb / gutter scope of work, per the contract documents.

32.0.3 Hot-Mix Asphalt Paving - This Work shall include, but not be limited to, all heavy duty and light duty asphalt pavements, mountable curbing, fine grading, compacted stone base, base coarse aggregate, if specified, bituminous tack coat, bituminous hot plant asphaltic binder and wearing courses, etc. in thickness shown and as required to provide complete asphalt pavement systems, per the contract documents. Additionally, provide mechanical broom cleaning, etc. of the asphalt binder or wear course prior to placement of final lift asphalt surface, etc. as required by the contract documents.

32.0.4 Adjustment of Tops/Grates/Covers - The Subcontractor shall adjust to appropriate finish grade elevations all tops, grates, and covers associated with the sanitary sewer manholes, catch basins, drop inlets, grate inlets, meter valve boxes, site utilities, etc. located within or directly in contact with an asphalt and concrete pavement system.

32.0.5 Striping & Signage Package – This work shall include, but not be limited to, asphalt striping, directional striping, handicapped striping, handicapped signage, parking striping, traffic and parking signage, etc. for a complete striping and traffic/parking signage package, per the contract documents. Thermoplastic striping included as required by AHJ/NCDOT.

32.0.6 This Subcontractor shall ensure that all work is to provide positive drainage without interruption or ponding of water. If ponding or "bird-bathing" occurs, this Subcontractor is responsible for making all repairs necessary to eliminate bird-bathing and achieve final acceptance by the Civil Engineer and Owner.

32.0.7 Repairs of concrete and adjacent structures damaged during installation of this scope of work shall be this Subcontractor's responsibility.

32.0.8 This Subcontractor shall provide proper (as determined by site-superintendent, governing authorities, and OSHA requirements) traffic plan and control services utilizing 3rd party as necessary while performing any work in roadways, thoroughfares, or within DOT right of ways.

32.0.9 This subcontractor is responsible for ~~Sawcut~~saw cutting existing pavement at the junction where the new pavement ties into the existing pavement.

~~32.0.10 Paving for light duty areas will take place in one (1) mobilization at the same time as surface course for heavy duty areas.~~

~~32.0.11~~32.0.10 Paving for heavy duty areas will take place at two (2) separate mobilizations: one for intermediate course and one (1) for surface course.

~~32.0.12~~32.0.11 This is a lump sum contract and quantities are per the contract documents. Payment or final contract values will not be based on verification of final quantities.

~~32.0.13 The paving price in this subcontract is based on the **April 2024 NCDOT** monthly terminal asphalt binder price of **$593.75 per liquid ton.** Any adjustments (up or down) that need to be made will be negotiated and reconciled prior to completion of each paving exercise.~~

~~32.0.14~~32.0.12 Sawcut existing pavement at the junction where the new pavement ties into the existing pavement.

33.0 SITE UTILITIES SCOPE OF WORK

33.0.1 Excavation, Trenching, Backfilling, Fine Grading & Compaction - This Work shall include, but not be limited to, all excavation, trenching, backfilling, fine grading, shoring, and bracing, where required, pumping and dewatering, if required, and compaction work associated with the proper installation of all work required of this Subcontract. All excavation, trenching, backfilling, fine grading and compaction work shall be completed in accordance with the use of safe excavation practices, governed by the Occupational Safety and Health Administration (OSHA). Permits and Inspections by

AHJs for Site Utilities are to be provided by this Subcontractor.

33.0.2 All bedding and fill material shall be compacted, tamped (at specified lift increments) and approved by the 3rd Party Geotech prior to the placement of any additional fill material being placed atop a previous fill lift. All fill material is to be tested and compaction approved as the work is placed and completed. All fill shall be compacted to at least 95% standard proctor or ~~to a greater~~ as required by the contract documents or the local governing authority, whichever is more stringent.~~.~~ This subcontractor is responsible for all warning tape and tracer wire as required by the contract documents.

~~33.0.3~~ All excavations shall be backfilled and compacted back to specified elevations, per the contract documents.

33.1 This subcontractor is to include all labor, materials, and equipment for all heavy and light duty concrete and asphalt paving per the contract documents.

~~33.0.4~~33.1.1 Site Utility Related Concrete – This Work shall include, but not be limited to, all site utility concrete, concrete thrust blocks, concrete valve box encasements, structure foundations, concrete cleanout encasements, etc., including reinforcing steel for concrete work required within this Scope of Work and any cast in place concrete work required to provide a complete system, per the contract documents.

~~33.0.5~~33.1.2 This Subcontractor shall provide and coordinate public utility locating services as part of this scope of work. No work shall commence without location complete and locate ticket submitted to Contractor. No machine excavation is permitted within three feet (3') of either side of utility locate lines. Potholing and hand-digging may be required and will be performed in compliance with all OSHA and Contractor requirements. Specifically, this Subcontract shall pothole and hand-dig as necessary near natural gas lines. Utility line strikes, should they occur, are to be reported immediately upon occurrence to Contractor and the governing Utility Company.

~~33.0.6~~33.1.3 Subcontractor shall coordinate ~~and~~ all required inspections and certifications as required by the contract documents and AHJ.

~~33.0.7~~33.1.4 This Subcontractor shall schedule, with applicable local and state health officials and/or agencies, all final inspections of the water and sewer systems no later than four (4) weeks prior to the time the system is to be put into operation. This Subcontractor shall have approved results of water tests, taken under this Subcontract, available for the officials/agencies upon arrival on-site. Additionally, a Contractor's Material & Test Certificate shall be provided to the Contractor upon successfully completing a fire and domestic water main flush test. Provide As-Built Data as required prior to the time the inspections are scheduled.

~~33.0.8~~33.1.5 This Subcontractor will~~has~~ include~~d~~ all pressure testing as required by the Contract Documents and AHJ.

A. STORM DRAINGE SYSTEM

~~33.0.9~~33.1.6 This Work shall include, but not be limited to, the providing of a complete storm drainage system including all piping work, temporary berms, drainage structures and piping, grate inlets, drop inlets, trench drains, storm drain outlet protection, detention pond baffles, pond kits, permanent connections to existing storm drainage structures and piping, #57 Stone where required, concrete work applicable to the storm drainage system, head walls, concrete flared end sections, rip rap, diversion ditches, junction boxes, reinforcing steel for cast in place concrete work within this scope of work, where required, and any other incidentals which may be required for a completely functional storm drainage system.

~~33.0.10~~33.1.7 It shall be this Subcontractor's responsibility to install the storm drainage system in accordance with the invert elevations indicated within the Contract Documents to ensure that the site storm drainage system performs as designed. Should any invert or profile discrepancies occur, this Subcontractor shall immediately advise Contractor, in writing, prior to proceeding. Protect all inlets as needed per Erosion Control requirements and NCDEQ requirements.

~~33.0.11~~33.1.8 Underground Rain Leader Drainage Systems - This Work shall include, but not be limited to, the providing of a complete underground rain leader drainage system including all piping work, pipe fittings, lawn inlets, where required, provision and installation of permanent connections / tie-in fittings / boots to downspouts, concrete work applicable to the underground rain leader drainage system and any other incidentals which may be required for a completely functional underground rain leader drainage system. Underground rain leaders are to be connected to the building downspouts complete with a downspout connector adapter / boot. Final connection of downspouts to connector adapter to be provided and installed by this Subcontractor. This Subcontractor shall coordinate roof leader details and installation with Concrete Subcontractor as necessary for location and sizes of block-outs as required.

~~33.0.12~~33.1.9 Tops, Frames and Grates - The Work shall include, but not be limited to, providing all tops, steel frames, and grates for each respective structure / manhole requiring a specific type, top, and grate. Work to be per contract documents and AHJ.

~~33.0.13~~33.1.10 Storm Drainage Maintenance and Cleaning – This Subcontractor shall perform interim and final cleaning of storm drainage pipes, grate inlets, drop inlets, curb inlets, etc. and remove all mud and debris prior to final acceptance.

~~33.0.14~~33.1.11 Storm Drainage Related Concrete – This Work shall include, but not be limited to, all structure foundations, concrete encasements, culverts, etc., reinforcing steel for concrete work required within this Scope of Work and any cast in place concrete work required to provide a complete storm drainage system, per the contract documents. This Subcontractor shall include concrete rings at asphalt paving areas around all clean-outs, hand-holes, manholes, valve boxes, ~~etc. associated~~etc. Associated with this scope of work.

B. SANITARY SEWER SYSTEM

~~33.0.15~~33.1.12 This Work shall include, but not be limited to, provision and installation of a complete sanitary sewer system per the contract documents and/or AHJ. This Subcontract is responsible for bringing utilities within 5 feet of the building. It is this contractors responsibility to coordinate with the plumbing subcontractor for exact stub-out locations. This Subcontractor is responsible for making final utility connections. ~~duplex sanitary sewer pump station, Oil-Sand separator, force main piping,~~ This Subcontractor is responsible for all testing and inspections as required by the contract documents, Health Department, AHJ, etc. ~~sewer piping, sewer manhole or blind pipe connections, trench stone bedding for sewer pipe, where specified, #57 stone manhole bedding, piping work, rubberized boots, manholes, outside drop manholes, manhole frames and covers, air/vacuum relief valves, where required, detector wire and tape, and related piping, clean outs, where required, joint fittings, permanent connection to existing manhole structure, modifications to existing manholes, and testing as required by the Contract Documents or the local or state governing agency having jurisdiction over this Work, such that the sanitary system is completed as designated within the Contract Documents for permanent tie-in within plus or minus five feet (+/- 5'-0") of the building by the Plumbing Subcontractor.~~

~~33.0.16~~33.1.13 It shall be the Subcontractor's responsibility to install the sanitary sewer system in accordance with the inverts and profiles illustrated in the Contract Documents and to ensure that the sewer system performs as designed and aligns with the plumbing design, per the contract documents.

~~33.0.17 Connection to domestic water or sanitary sewer piping is to be performed by the last subcontractor arriving at the point of tie-in or coordinated or by whichever party holds the applicable license. Should a discrepancy be discovered regarding the tie-in invert elevation or locations for the new system, the Contractor shall be notified in writing for direction prior to the work proceeding.~~

33.1.14 Connection to domestic water or sanitary sewer piping is to be performed by the subcontractor arriving at the point of tie in.

33.1.15 At completion of site utility work, Subcontractor shall participate in an onsite meeting with all applicable parties to review and address the required steps and checklists for successful and timely commissioning of utilities.

~~33.0.18~~33.1.16 It is the responsibility of the subcontractor to provide a complete As-Built survey of all underground utilities provided by this subcontractor.

C. DOMESTIC WATER & FIRE WATER DISTRIBUTION

~~33.0.19~~33.1.17 This Work shall include, but not be limited to, all trench stone bedding for water piping work, where specified, domestic water piping work, fire main water piping work, gate valves, post indicator

valves, fire hydrants, double check backflow preventers, fire water main water flush testing, joint fittings, reducers, reduced pressure backflow device with weather proof hot boxes (incl. heaters) and backflow preventer with weather proof hot box (incl. heaters), water valve boxes, water meter assemblies, meter box encasements, detection wire and tape, thrust blocks, fire main meter detector, if specified, fire main backflow preventer assembly and concrete vault or weather proof hot box, if specified, and cleaning and testing as required by the Contract Documents or the local or state governing agency having jurisdiction over this Work, such that the domestic water and fire water distribution system is completed as designated within the Contract Documents.

~~33.0.20~~33.1.18 The Fire Main(s) shall be brought into building at the indicated locations per the contract documents and capped at one foot (1' 0") above finished floor ~~(1'-0")~~ for permanent tie-in by the Fire Protection Subcontractors. Domestic water system service(s) shall be brought to within (5'-0") from the building at indicated locations per the contract documents and capped for permanent tie-in. Final connection is to be made by this subcontractor. ~~by the Plumbing Subcontractor.~~ Coordination of location and routing between Plumbing and Fire Water Distribution System plans and civil/utility plans is by this Subcontractor. Coordinate locations and installation with the Concrete Subcontractor as required. Coordinate all electrical and fire alarm requirements for hot-boxes or other system components as required with the Electrical Subcontractor. Flush all domestic and fire distribution lines prior to closure/capping per regulatory requirements and provide test/flush reports at completion of flush. The Fire Protection Subcontractor, Contractor, and Fire Marshal must be in attendance to witness the flushing of the fire mains.

~~33.0.21~~33.1.19 This scope includes the complete boring operation of all water lines that run beneath Gordon Road ~~River Road~~ including all traffic control, AHJ & utility coordination, robust public and worker safety measures, 811 locates, and all other activities required of this undertaking.

~~33.0.22~~33.1.20 At completion of utility scopes, Subcontractor shall participate in an onsite meeting with all applicable parties to review and address the required steps and checklists for successful and timely commissioning of utilities.

33.1.21 Subcontractor shall be responsible for the necessary permits with the New Hanover County Fire Marshall's Office for installation and inspection of the Fire Main. Subcontractor shall be responsible for all corrective work associated with rework resulting from insufficient coordination with and inspection by the AHJ.

D. Exterior Water System

33.1.0 This Subcontractor shall provide all necessary labor, materials, and equipment to performed a turnkey scope of work for the exterior water system per the contract documents. This includes but is not limited to: permits, surveying, connections to existing water systems, surveying, locating, as-builts, connections to pumps (if applicable), and terminate lines to within 5' of building pad.

17.0 SCOPE OF WORK CLARIFICATIONS AND/OR OTHER REQUIREMENTS

~~17.0.1 LEED - Subcontractor has read and fully understands the LEED requirements of this project and has included all necessary costs to achieve the desired LEED Silver rating within this Subcontract, per the contract documents.~~

~~17.0.2 Subcontractor shall abide by Contractor's Waste Management Plan as it applies to this scope of work per the contract documents and LEED certification requirements. Subcontractor shall be responsible for all associated costs due to violation of Contractor's Waste Management Plan.~~

~~17.0.3 This Subcontractor shall submit a site-specific safety plan and QC plan for approval by Contractor prior to start of work.~~

~~17.0.4 Submittals related to this scope of work shall be made to Contractor within **ten (10) calendar days** of contract execution and so as not to delay the project schedule. Subcontractor field supervision shall have hard copies of all approved submittal documents readily available onsite and are expected to reference approved submittal documents and cross-check installations as part of Subcontractor's own self-performed QA/QC program.~~

~~17.0.5 Subcontractor accepts responsibility for drawing notes where "Contractor" is stated in the contract documents as it pertains to this scope of work.~~

~~17.0.6 Utility Coordination - Immediately upon award, Subcontractor shall assist the General Contractor and Owner, with advanced coordination of all site utilities – including but not limited to Duke Energy, CFPUA, The City of Wilmington, and Piedmont Gas.~~

~~17.0.7 Preconstruction Meetings - Attendees MUST be the assigned personnel that will be performing scope discussed. If your scope consists of multiple crews or trades with separate supervision, all supervisors will be required to attend.~~

~~17.0.8 This subcontractor is responsible for attending meetings and/or corresponding with Project Superintendent to allow adequate time for ordering and delivery of materials and for providing adequate manpower to meet project schedule.~~

~~17.0.9 All employees must be recognized by the Contractor's Project Superintendent at the start of work every day.~~

~~17.0.10 SDS Forms will be required upon commencement of work with daily PTP and morning huddles with Contractor's Project Superintendent.~~

~~17.0.11 Subcontractor will provide its own trash containers for their daily use, clearly labeled with their company name. This trash container shall be emptied into Contractor's trash container **daily** and shall not include hazardous waste or personal trash. Project Dumpster(s) will be provided by Contractor.~~

17.0.12 Subcontractor is required to attend weekly job-site meetings. Failure to attend job-site meetings may result in a penalty of $500.00 per meeting missed. Attendee must speak English and have the authority to make decisions / possess prior knowledge of the scope of work and schedule, as well as potential future CO work.

17.0.13 Warranties and close-out manuals shall be per the project specifications and shall be provided at the 50% complete mark of overall project completion.

17.0.14 The project site shall be open for Subcontractor work from **7:00am-5:00pm, Monday-Friday**, unless otherwise directed by the Project Superintendent. The site will be open on Saturdays for make-up days. No work, deliveries, pickups, or subcontractor presence shall be allowed outside of normal site hours without prior approval from Contractor's Project Superintendent and Project Manager.

17.0.15 Overtime required to meet the contract schedule is included in this Subcontract Agreement. No additional monies will be added for overtime. This subcontractor shall work whatever hours necessary to meet the contract schedule.

17.0.16 **Minimum (5) day work weeks.** Necessary labor to meet schedule is included. No additional cost will be accepted for additional labor.

17.0.17 This Subcontractor has included all required mobilizations to fully perform and execute the agreed upon scope of work. Shall additional mobilizations be requested or required of the Subcontractor or due to non-performance, these shall be at no additional cost to the Contractor.

17.0.18 Subcontractor shall warranty all labor for the minimum duration as outlined by the Prime Contract and the contract documents. Subcontractor shall warranty all materials as specified in the contract documents and/or by the applicable product's manufacturer.

17.0.19 Project specific traffic control shall be provided by this Subcontractor. In addition, this Subcontractor shall stagger shipments/deliveries to prevent "stacking" of trucks on City/State/Federal roadways unless critical to the job schedule. Subcontractor shall coordinate deliveries with Contractor's Project Superintendent regarding hours and restrictions.

17.0.20 Subcontractor shall be responsible street cleaning and debris removal resulting from this scope of work.

17.0.21 Due to site conditions, onsite parking areas are extremely limited and during some portions of the work, as designated by the Project Superintendent, onsite parking of personal vehicles or work vehicles not in use may be restricted. During those periods, parking without permission would result in vehicles being towed at Subcontractor's expense. Additionally, onsite storage of materials will also be limited, and Conex containers will only be allowed by prior approval from the Project Superintendent.

17.0.22 Site Usage & Logistics - Due to limited space Contractor reserves the right to require on time deliveries for this scope of work. Subcontractor shall be responsible for coordinating the logistics and storage of all deliveries with the Contractor's Project Superintendent. Material left exposed to the elements shall be cleaned, if deemed necessary by the Contractor, prior to the material being installed.

17.0.23 Subcontractor is aware of limited site access and staging and shall provide their own off-site storage as necessary. All tower crane hoisting shall be scheduled in advance and coordinated with Contractor's Project Superintendent.

17.0.24 Subcontractor's resources and outsourced delivery trucks by others are considered the responsibility of the Subcontractor.

17.0.25 Subcontractor to coordinate access to each building with the Contractor's Project Superintendent to avoid damage to work in place including but not limited to curb, site utilities, doors, windows, etc.

17.0.26 It is understood there may be utilities (new or existing), equipment, or other trades potentially in the way during operations performed by this Subcontractor. This Subcontractor agrees to coordinate as necessary to work around all obstacles to meet the requirements of the schedule.

17.0.27 Street Cleaning – This subcontract is responsible to provide a water truck and broom tractor for the purpose of cleaning mud and sediment from the adjacent streets due to this subcontractor's scope of work and as required by the Construction Manager.

17.0.28 This Subcontractor shall provide heat trace/controls and insulation for hot box and other systems as indicated on the Contract Documents. Power & connection by Electrical Subcontractor.

17.0.29 This Subcontractor shall assist the Contractor with access to temporary water as needed for Contractor's office trailer and construction.

17.0.30 This Subcontractor shall be responsible for all underground locating, private orotherwise, required to complete this Scope of Work.

17.0.31 It is understood there may be utilities (new or existing), equipment, or other trades potentially in the way during operations performed by this Subcontractor. This Subcontractor agrees to coordinate as necessary to work around all obstacles to meet the requirements of the schedule.

17.0.32 Special inspections - As Special inspections will be required on this project, it will be the responsibility of this Subcontractor to provide supervision to accompany inspectors in coordination with Contractor's Project Superintendent. Any deficiencies noted shall be corrected at the time of inspection. If Subcontractor is unable to make the correction during the inspection and a deficiency is placed on a non-compliant list, this Subcontractor will have no more than **seventy-two (72) hours** to make the correction and schedule the reinspection to have the item removed from the non-

~~compliant list. All non-complaint items shall be reported to the Contractor's Project Superintendent as soon as possible and before the close of business on the day of inspection. Failure to make corrections as stated above could result in a stop work order until corrections are made.~~

~~17.0.33~~17.0.1 It is understood to pick up all ~~8~~ unit prices in Specifications as applicable to this scope of work.

—OTHER SCHEDULE SUMMARY INFORMATION—

The Substantial Completion date for the **Earthwork, Exterior Improvements, & Utilities** Subcontractor is as reflected within the Construction Schedule. Special attention should be directed to the Construction Schedule for project sequencing requirements which are a requirement of this Scope of Work.
If requested, the cost of the Performance and Payment Bonds (amount as provided) will be reimbursed to the Subcontractor based on the following revised contract revision noted below:

Subcontractor shall provide Performance and Payment Bonds, if required, each with a penal amount equal to 100% of the Subcontract Amount, on forms acceptable to the General Contractor. The premium for these bonds shall be paid by Subcontractor and the cost thereof shall be invoiced separately to the General Contractor based on the Subcontractor providing an actual paid receipt from its surety agent. The value of the Performance and Payment bond in all cases shall not be more than the Subcontractor's bid alternate amount submitted for these bonds. If the bond(s) value is more than the bid amount submitted for these bonds, the Subcontractor shall pay the difference to its surety agent at its cost.

—UNIT PRICES—

To the extent that some or all of the Subcontractor's Work is to be performed on a unit price basis, the Subcontract Amount shall be computed in accordance with the unit prices set forth below. Unit prices are deemed to include all costs related to Subcontractor's performance of the Work, including, but not limited to, costs of labor, supervision, services, materials, equipment, tools, scaffolds, hoisting, transportation, storage, insurance, and taxes, and all overhead and profit. Quantities shall be measured by means acceptable to Owner, General Contractor and Subcontractor, and if applicable, an independent testing firm hired by Owner.

UNIT PRICES			
UNIT NO.	UNIT PRICE DESCRIPTION	UNIT PRICE	UNIT MEASURE
1	Unsuitable soils removal and disposal off-site		Cubic Yard
2	Replacement of unsuitable soils removal with off-site suitable soil in-place		Cubic Yard
3	Replacement of unsuitable soils removal with Aggregate Base Course in-place		Cubic Yard
4	Replacement of unsuitable soils removal with No. 57 washed stone in-place		Cubic Yard
5	Geo-Grid in place		Square Yard
6	Biaxial Geo-Grid in place		Square Yard
7	Woven Geo-Textile (Separation) Fabric in place		Square Yard
8	Non-Woven Geo-Textile (Separation) Fabric in place		Square Yard

END OF SECTION
TRADE PACKAGE SCOPE OF WORK:
31A, 32A, & 33A – EARTHWORK, EXTERIOR IMPROVEMENTS, & UTILITIES SUBCONTRACT

TRADE PACKAGE SCOPE OF WORK

31B PEST CONTROL SUBCONTRACT

Furnish all labor, materials, tools, taxes, safety, insurances, equipment, hoisting, cranes, supervision, and all other incidentals necessary to accomplish all **Pest Control** Work in accordance with all Contract Documents and as defined within **Trade Package General Scope Requirements** and this Scope of Work.

Subcontractors/Suppliers performing work on multiple portions of the project site (i.e., buildings, parking area, site, etc.) shall provide separate equipment, hoisting, cranes, supervision including, but not limited to management, superintendent, foreman, tradesman, laborers, etc. for each portion unless agreed to otherwise in writing by the General Contractor. If the project needs and schedule are not being met to the satisfaction of the General Contractor, written approval will be rescinded, and the original staffing requirements shall be provided by the Subcontractor.

Project Specifications for the Pest Control Scope of Work are listed below. This Subcontractor or Supplier shall carefully examine all specification sections and drawings within the Contract Documents and be responsible for all work described within this Scope of Work and as required on the project.

PROJECT SPECIFICATIONS

This Subcontractor is responsible for all Division 1 - General Requirements prepared by the Architect, Design Consultants, and/or General Contractor or as designated elsewhere within the Technical Specifications or Drawings as applicable to this Trade Package Scope of Work.

DIVISION 01 – GENERAL REQUIRMENTS	
GC Req.	General Requirements Manual
GC Req.	Trade Package Scope Manual
GC Req.	Trae Package General Scope Requirements
Division 01	All Division 01 Specification as Required by Samet Corporation

Primary Responsibility

This Subcontractor is responsible for all Primary Specification Responsibilities listed below unless this Scope of Work specifically states otherwise.

PRIMARY TECHNICAL SPECIFICATION RESPONSIBILITIES (PROJECT MANUAL)	
Gen. Note	**Specifications are included on the Drawings**
31-31-16	Termite Control

Secondary Responsibility

This Subcontractor is responsible for all Secondary Specification Responsibilities listed below to the extent applicable, or defined, within this Scope of Work.

SECONDARY TECHNICAL SPECIFICATION RESPONSIBILITIES

Gen. Note	Specifications are included on the Drawings
Division 03	Cast in Place Concrete
Division 31	Earthwork
Division 32	Exterior Improvements

The **Pest Control** Subcontractor shall be responsible for complying with the requirements of each Scope of Work Description **even if** those requirements are not shown within the Specification Sections listed above.

This Subcontractor shall be responsible for all Primary Specification Responsibilities identified above in their entirety. All costs associated with Primary Specification Responsibilities shall be included in this Subcontractor's Scope of Work and reflected in bid amount.

This Subcontractor shall be at least partially responsible for Secondary Specification Responsibilities identified above. The Secondary Specifications identify work scopes for which this Subcontractor is not wholly responsible but shall be applicable as it relates to the execution of Primary Specification Responsibilities. This may include a varying degree of responsibility from simple coordination to performing entire portions of work. The Secondary Specifications are not intended to be all inclusive and shall not limit the Subcontractor in any way with regards to installation of work identified in Primary Specification Responsibilities.

31.0 TERMITE TREATMENT SCOPE OF WORK DESCRIPTION

31.0.1 Subcontractor shall perform the termite soil treatment for per the project specifications.~~this project.~~

~~31.0.2~~

~~Based upon the specifications for this project the Subcontractor shall utilize Premise Pre-construction Termiticide manufactured by Bayer and diluted in water to .05% active ingredient. Product is applied to the soil at a rate of one (1) gallon per ten (10) SF beneath slabs; four (4) gallons per 10 LF along foundation walls and other slab penetrations. Subcontractor will utilize their own water source.~~

31.0.3 Subcontractor shall include twelve (12) months of maintenance~~continuing~~ service from the General Contractor's date of Substantial Completion. This continuing service shall include monitoring, inspection, and re-treatment for occurrences of all termite activity. The Subcontractor agrees to provide a continuing service agreement stating services, obligations, conditions, and terms for the agreement period, as well as terms for future renewal options.

31.0.4 Subcontractor hereby agrees that the applicable warranty may be renewed annually for a period of (5) years following the date of issuance with the mutual consent of both parties and provided that the Owner pays an annual renewal fee. Should the Owner fail to pay the renewal fee within sixty (60) days after the anniversary of the warranty it shall void the warranty without privilege of reinstatement. This Subcontractor reserves the right to revise the annual renewal fee as of anniversary date.

31.0.5 Subcontractor shall provide a written one (1) year warranty, with the option to be renewed annually for a five (5) year bond, on manufacturer's standard form, signed by the applicator and subcontractor,

certifying that termite control work, consisting of applied soil termiticide, will prevent infestation of subterranean termites. If subterranean termite activity or damage is discovered during the warranty period, the Subcontractor shall re-treat soil and repair or replace damage caused by termite infestation. Bond shall be renewable by Owner and transferrable upon sale of property.

31.0.6 Subcontractor shall provide treatment tickets to the General Contractor after each treatment, properly labeled by location, building information, etc. for verification.

END OF SECTION
TRADE PACKAGE SCOPE OF WORK:
31B PEST CONTROL SUBCONTRACT

TRADE PACKAGE SCOPE OF WORK

32E LANDSCAPING SUBCONTRACT

Furnish all labor, materials, tools, taxes, safety, insurances, equipment, hoisting, cranes, supervision, and all other incidentals necessary to accomplish all **Landscaping** Subcontract Work in accordance with all Contract Documents and as defined within **Trade Package General Scope Requirements** and this Scope of Work.

Subcontractors/Suppliers performing work on multiple portions of the project site (i.e., buildings, parking area, site, etc.) shall provide separate equipment, hoisting, cranes, full-time English-speaking supervision including, but not limited to management, superintendent, on site foreman, tradesman, laborers, etc. for each portion unless agreed to otherwise in writing by the General Contractor. If the project needs and schedule are not being met to the satisfaction of the General Contractor, written approval will be rescinded, and the original staffing requirements shall be provided by the Subcontractor.

Project Specifications for the **Landscaping** Scope of Work are listed below. This Subcontractor or Supplier shall carefully examine all specification sections and drawings within the Contract Documents and be responsible for all work described within this Scope of Work and as required on the project.

PROJECT SPECIFICATIONS

This Subcontractor is responsible for all Division 1 - General Requirements as listed below prepared by the Architect, Design Consultants, and/or General Contractor or as designated elsewhere within the Technical Specifications or Drawings as applicable to this Trade Package Scope of Work.

DIVISION 01 – GENERAL REQUIRMENTS	
GC Req.	General Requirements Manual
GC Req.	Trade Package Scope Manual
GC Req.	Trae Package General Scope Requirements
Division 01	All Division 01 Specification as Required by Samet Corporation

Primary Responsibility

This Subcontractor is responsible for all Primary Specification Responsibilities listed below unless this Scope of Work specifically states otherwise.

PRIMARY TECHNICAL SPECIFICATION RESPONSIBILITIES (PROJECT MANUAL)	
	Specifications are included on the Drawings
~~31 22 00~~	~~Grading~~
32-92-00	Lawns and Grasses~~Turf & Grass / Section 329300 Plants~~
32-93-00	Exterior Plants

Secondary Responsibility

This Subcontractor is responsible for all Secondary Specification Responsibilities listed below to the extent applicable, or defined, within this Scope of Work.

SECONDARY TECHNICAL SPECIFICATION RESPONSIBILITIES	
	Specifications are included on the Drawings
Gen. Note	**This Subcontractor is responsible for complete Specifications package as it relates to the Landscaping Scope of Work.**
Division 31	Earthwork
Division 32	Exterior Improvements
Division 33	Utilities

The **Landscaping** Subcontractor shall be responsible for complying with the requirements of each Scope of Work Description / Clarification Section listed below, **even if** those requirements are not shown within the Specification Sections listed above.

This Subcontractor shall be responsible for all Primary Specification Responsibilities identified above in their entirety. All costs associated with Primary Specification Responsibilities shall be included in this Subcontractor's Scope of Work and reflected in bid amount.

This Subcontractor shall be at least partially responsible for Secondary Specification Responsibilities identified above. The Secondary Specifications identify work scopes for which this Subcontractor is not wholly responsible but shall be applicable as it relates to the execution of Primary Specification Responsibilities. This may include a varying degree of responsibility from simple coordination to performing entire portions of work. The Secondary Specifications are not intended to be all inclusive and shall not limit the Subcontractor in any way with regards to installation of work identified in Primary Specification Responsibilities.

The **Landscaping** Subcontractor is responsible for all Work described herein and below unless specifically noted otherwise to be part of another Subcontractor's Scope of Work.

Prior to commencing with the installation of any work, this Subcontractor shall field verify and provide the General Contractor with written confirmation that all areas scheduled to receive the materials provided as part of this Scope of Work are in a condition acceptable to this Subcontractor. Failure to notify the General Contractor in writing of such acceptance prior to commencing any work shall constitute this Subcontractor's acceptance of the applicable areas.

The drawings, details and specifications do not necessarily indicate or describe all work required for the full performance and completion of the requirements of the Contract Documents. This Subcontractor shall use all reasonable care to include those items necessary and/or implied to fill foreseeable gaps, omissions or conflicts that prevent a complete and functioning system even though it may not be detailed.

Provide all shop drawings, stamped drawings, calculations, submittals, samples, mock-ups, certificates, qualifications, etc. as required for approval by Architect/Engineer, and/or local governing authorities in a timely manner to avoid delaying the project.

See below for all safety submittals required throughout the duration of the project:

32.0 LANDSCAPING SCOPE OF WORK DESCRIPTION

32.0.1 The Landscaping Subcontractor is responsible for all layout for all aspects covered under this Scope of Work.

32.0.2 The Grading Subcontractor shall be responsible for re-spreading topsoil at all on-site disturbed areas to receive permanent grassing or sod work being provided by the Landscaping Subcontractor. Grading subcontractor shall deliver all areas to within 0.10" of finished grade. Excess excavated materials including subsoil, etc. shall be evenly distributed on site (re-spread, compacted and fine graded) at on-site locations designated by the Subcontractor.

32.0.3 Scope of work includes tilling of all beds, planting soil mix at bed areas, fertilizer amendment at bed areas, staking of all trees, ~~Star-Green Professional Weed Barrier with 3" of river wash stone within 3' of FDC on building and fire hydrant,~~ and per-emergent herbicide at mulched areas. All ~~sod~~ grassed areas are to be prepped with a Harley rake and fertilized.

32.0.4 Fine Grading – Prior to applying grass seed ~~and/or sod~~, the Landscaping Subcontractor shall fine grade, apply soil amendments to topsoil and rockhound all disturbed on site areas which receives re-spread topsoil by the Sitework Subcontractor. **All rocks within the re-spread topsoil greater than or equal to two (2") inches in diameter shall be removed by the Sitework Subcontractor. All rocks less than two (2") inches in diameter shall be rock hounded and removed from the respread topsoil by the Landscaping Subcontractor.**

32.0.5 Provide and install 3" of brown pine bark mulch over the specified Star-Green Professional Weed Barrier with all beds to receive specified / shown depth connected in one plant bed. Buffer plantings will receive mulch rings around each shrub/tree as per details on Sheet LS100.

32.0.6 Sodded areas - This Work shall include mulching, soil amendments, fertilizer, lime, watering, etc. at all areas disturbed by on site construction activities.

32.0.7 Trees and Plantings - This Work shall include providing all trees and plantings complete, including but shall not be limited to, specified warranty, trees, shrubs, plantings, planting soil mix including adding specified soil amendments, etc., burlap, filter fabrics, stakes and deadman, anchors, guys and wire ties, hoses, drainage gravel, mulch, anti-desiccants, fertilizer, watering, maintenance, etc. at all on site locations designated to receive trees and plantings.

32.0.8 Prior to receiving the one (1) year Final Acceptance Certificate from the Contractor and/or Owner, the Landscaping Subcontractor shall remove and dispose of off-site at the expense of the Landscaping Subcontractor all guy wires and stakes and any other temporary appurtenance which were installed and left in place until Final Acceptance.

32.0.9 **Call 811 and locate all underground utilities before performing any excavation.**

32.0.10 **Scope of work includes the maintenance of all trees, shrubs, ground cover and lawn areas by watering as required for a period of 18 months following inspection and acceptance of plant material including all trees, shrubs, ground cover and lawn areas. Reference Sheet LS100.**

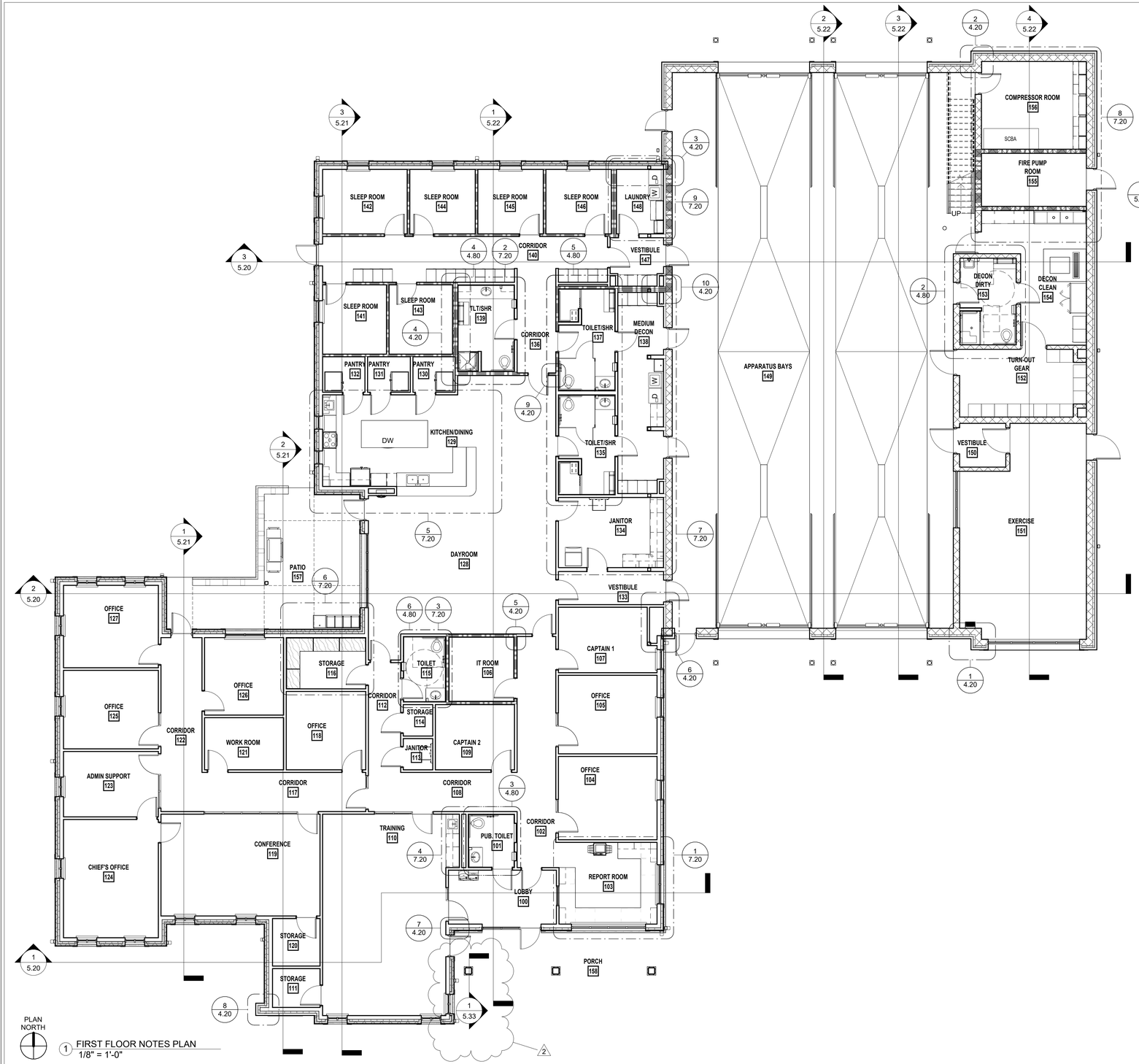
—OTHER SCHEDULE SUMMARY INFORMATION—

The Substantial Completion date for the Landscape Subcontractor is as reflected within the Construction Schedule. Special attention should be directed to the Construction Schedule for project sequencing requirements which are a requirement of this Scope of Work.

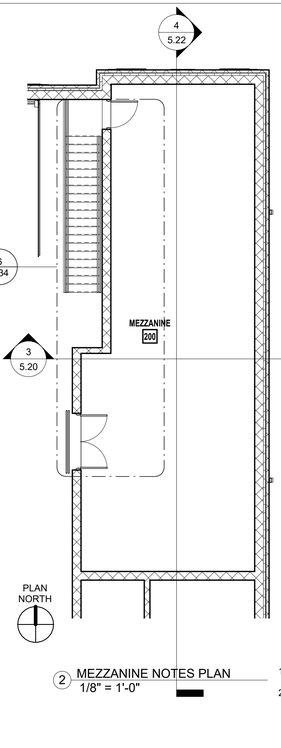
END OF SECTION
TRADE PACKAGE SCOPE OF WORK:
32E LANDSCAPING SUBCONTRACT

See attached sheets.

Stewart · Cooper · Newell Architects	REFERENCE SHEET NO. 4.11, 5.10, 5.12 Revision to include details for Porch Entry Columns. Newly issued 5.14 and 5.33 to include detail for Signage and Entry Column Revision to 5.10 and 5.12, New sheet 5.14 for Signage; New sheet 5.14 and 5.33 for Column	05.10.2024
NEW HANOVER COUNTY FIRE AND RESCUE GORDON ROAD STATION	ARCHITECTURAL SUPPLEMENTAL INSTRUCTIONS (ASI)	ASI #2



1 FIRST FLOOR NOTES PLAN
1/8" = 1'-0"



2 MEZZANINE NOTES PLAN
1/8" = 1'-0"

GENERAL NOTES

1. ALL CONTRACTORS MUST MAKE ON SITE VISITATIONS TO PROJECT SITE PRIOR TO BIDDING TO FAMILIARIZE THEMSELVES WITH THE EXTENT OF CONSTRUCTION.
2. DISCREPANCIES: THE CONTRACTOR SHALL INFORM THE ARCHITECT IN WRITING OF ANY DISCREPANCIES OR OMISSIONS NOTED ON THE DRAWINGS OR IN THE SPECIFICATIONS OR OF ANY VARIATIONS NEEDED IN ORDER TO CONFORM TO CODES, RULES AND REGULATIONS. UPON RECEIPT OF SUCH INFORMATION, THE ARCHITECT WILL SEND WRITTEN INSTRUCTION TO ALL CONCERNED. ANY SUCH DISCREPANCY, OMISSION OR VARIATION NOT REPORTED SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND WORK SHALL BE PERFORMED IN A MANNER DIRECTED BY THE ARCHITECT.
3. EXISTING CONDITIONS: ALL EXISTING INFORMATION WAS TAKEN FROM DRAWINGS FURNISHED BY OTHERS WHICH MAY OR MAY NOT BE CORRECT. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS AND CONDITIONS AT THE JOB SITE. ANY DISCREPANCIES OR VARIATIONS FROM THE CONDITIONS SHOWN ON THE DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT IN WRITING.
4. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF PERSONS USING THE SURROUNDING FACILITIES WHO COME INTO CONTACT WITH THE AREA OF CONSTRUCTION. HE SHALL PROPERLY BARRICADE THE AREA TO PREVENT INTRUSION BY PERSONS NOT ASSOCIATED WITH CONSTRUCTION.
5. DRAWING SCALES: THESE DRAWINGS ARE PREPARED TO THE SCALE NOTED, HOWEVER, DIMENSIONS ARE NOT TO BE DERIVED BY SCALING THE PLANS, SECTIONS OR DETAILS. IF THERE IS ANY QUESTIONS ABOUT DIMENSIONS OR DETAILS, CONTACT THE ARCHITECT FOR INFORMATION PRIOR TO STARTING WORK.
6. ALL NOTES APPLY TO ALL DRAWINGS AND ALL TRADES. IT IS THE RESPONSIBILITY OF ALL CONTRACTORS AND TRADES TO COORDINATE THE INSTALLATION OF THEIR WORK WITH THE INSTALLATION OF WORK BY ALL OTHER CONTRACTORS AND TRADES.
7. THE REQUIREMENTS OF THE DRAWINGS, GENERAL REQUIREMENTS AND ALL ITEMS OF THE CONTRACT DOCUMENTS ARE EQUALLY BINDING ON ALL CONTRACTORS AND TRADE. EACH CONTRACTOR IS REQUIRED TO KEEP FULL SETS OF THE CONTRACT DOCUMENTS FOR HIS/HERS EMPLOYEES USE ON THE PROJECT TO ASSURE THAT ALL WORK IS PROPERLY COORDINATED AND INSTALLED WITH THE WORK OF OTHER CONTRACTORS AND TRADES.
8. CONTRACTORS SHALL MEET WITH THE ARCHITECT PRIOR TO CONSTRUCTION OF THE PROJECT TO REVIEW ALL EXISTING CONDITIONS AND THE EXACT EXTENT OF THE WORK TO BE COMPLETED.
9. ALL WORK SHALL BE IN ACCORDANCE WITH THE NC 2018 BUILDING CODE AND ALL OTHER LOCAL CODES AND REGULATIONS HAVING JURISDICTION.
10. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING CONSTRUCTION AROUND THE SITE WHICH WILL REMAIN. ANY DAMAGES SHALL BE REPAIRED TO THE OWNER'S SATISFACTION AT NO COST.
11. SLOPE ALL EXTERIOR LANDINGS, WALKS, PORCHES, STEPS, ETC. 1/8" : 12" AWAY FROM THE BUILDING FOR DRAINAGE UNLESS NOTED OR SHOWN OTHERWISE.
12. FRAMING LUMBER IN CONTACT WITH MASONRY, CONCRETE OR STEEL SHALL BE PRESSURE TREATED.
13. GENERAL CONTRACTOR SHALL PROVIDE ALL MISCELLANEOUS LOOSE STEEL LINTELS AS REQUIRED WHERE MECHANICAL, PLUMBING OR ELECTRICAL EQUIPMENT PASS THRU WALLS OR OVER ANY BUILT-IN ITEMS IN MASONRY WALLS.
14. SLOPE FLOOR TO FLOOR DRAINS. COORDINATE ALL FLOOR DRAINS WITH PLUMBING CONTRACTOR.
15. PROVIDE WEEP HOLES @ 24" O.C. OVER ALL MASONRY OPENINGS.
16. PROVIDE FIRE TREATED LUMBER AS REQUIRED BY THE BUILDING CODE.
17. FIRE PENETRATION NOTES APPLY TO ALL TRADES.
18. PROVIDE BLOCKING IN METAL STUD WALLS AS REQUIRED FOR ALL SUSPENDED ITEMS INCLUDING BUT NOT LIMITED TO E.W.C., TOILET ACCESSORIES, PLUMBING, MECHANICAL, ELECTRICAL & E.T.C. - COORDINATE WITH OTHER TRADES.
19. SEE ELEVATIONS FOR EXTERIOR WALL MASONRY CONTROL JOINTS (CJ) LOCATIONS. CONTROL JOINTS TO BE IN MASONRY JOINTS. LOCATE WALL CONTROL JOINTS AS INDICATED.
20. FURR WALLS AS REQUIRED FOR MECHANICAL AND PLUMBING VENTS.
21. DO NOT CUT ANY LAY-IN ACOUSTICAL CEILING PANELS LESS THAN 6" UNLESS INSTRUCTED BY THE ARCHITECT. LAY-IN CEILING PANELS TO BE EQUALLY SPACED IN AREA.
22. DIMENSIONS SHOWN ON FLOOR PLANS ARE TO FACE OF STUD UNLESS NOTED OTHERWISE.
23. UNLESS NOTED OTHERWISE, CARRY ALL FIRE RATED WALLS AND PARTITIONS TO STRUCTURE ABOVE.
24. NO CORE OF BLOCKS SHOULD BE EXPOSED. USE SOLID BLOCK WHERE REQUIRED TO KEEP CORES FROM BEING VISIBLY EXPOSED.
25. CMU WALLS DIMENSIONED 8" OR 12" NOM U.N.O.
26. WALL TO TERMINATE 12" ABOVE HIGHEST ADJACENT CEILING U.N.O.
27. THERE SHALL BE NO EXPOSED CONDUIT ON THE EXPOSED CMU OR ANY OTHER WALLS.

GENERAL NOTE

ALL NOTES APPLY TO ALL DRAWINGS AND ALL TRADES. IT IS THE RESPONSIBILITY OF ALL CONTRACTORS AND TRADES TO COORDINATE THE INSTALLATION OF THEIR WORK WITH THE INSTALLATION OF WORK BY ALL OTHER CONTRACTORS AND TRADES. THE REQUIREMENTS OF THE DRAWINGS, GENERAL REQUIREMENTS AND ALL ITEMS OF THE CONTRACT DOCUMENTS ARE EQUALLY BINDING ON ALL CONTRACTORS AND TRADES. EACH CONTRACTOR IS REQUIRED TO MAINTAIN FULL SETS OF THE CONTRACT DOCUMENTS FOR HIS EMPLOYEES USE ON THE PROJECT TO ASSURE THAT ALL WORK IS PROPERLY COORDINATED AND INSTALLED WITH THE WORK OF OTHER CONTRACTORS AND TRADES.

WHENEVER THERE ARE DISCREPANCIES BETWEEN DRAWINGS, OR BETWEEN THE DRAWINGS AND SPECIFICATIONS, OR CONFLICTS WITHIN THE SPECIFICATIONS AND/OR DRAWINGS, AND SUCH DISCREPANCY IS NOT CALLED TO THE ARCHITECTS ATTENTION IN TIME TO PERMIT CLARIFICATION BY ADDENDUM, THE CONTRACTOR SHALL BASE HIS BID UPON PROVIDING THE BETTER QUALITY OR GREATER OF WORK OR MATERIAL CALLED FOR, SHALL SUBMIT A WRITTEN STATEMENT WITH HIS PROPOSAL NOTING SUCH DISCREPANCIES, AND SHALL SO FURNISH AND INSTALL SUCH BETTER QUALITY OR GREATER QUANTITY UNLESS OTHERWISE ORDERED IN WRITING.

Project No.
1737

Date:
03.29.2024
Drawn by:
AJP/GAS
Checked by:
KCN
Revisions: 2
05.10.2024
ADDENDUM 2

STEWART-COOPER-NEWELL ARCHITECTS, P.A. REGISTERED ARCHITECTURAL CORPORATION LIC.NO. 51313 NORTH CAROLINA GASTONIA, N.C.

719 East Second Avenue
Gastonia, NC 28054
Phone: 704.865.6311
Fax: 704.865.0046

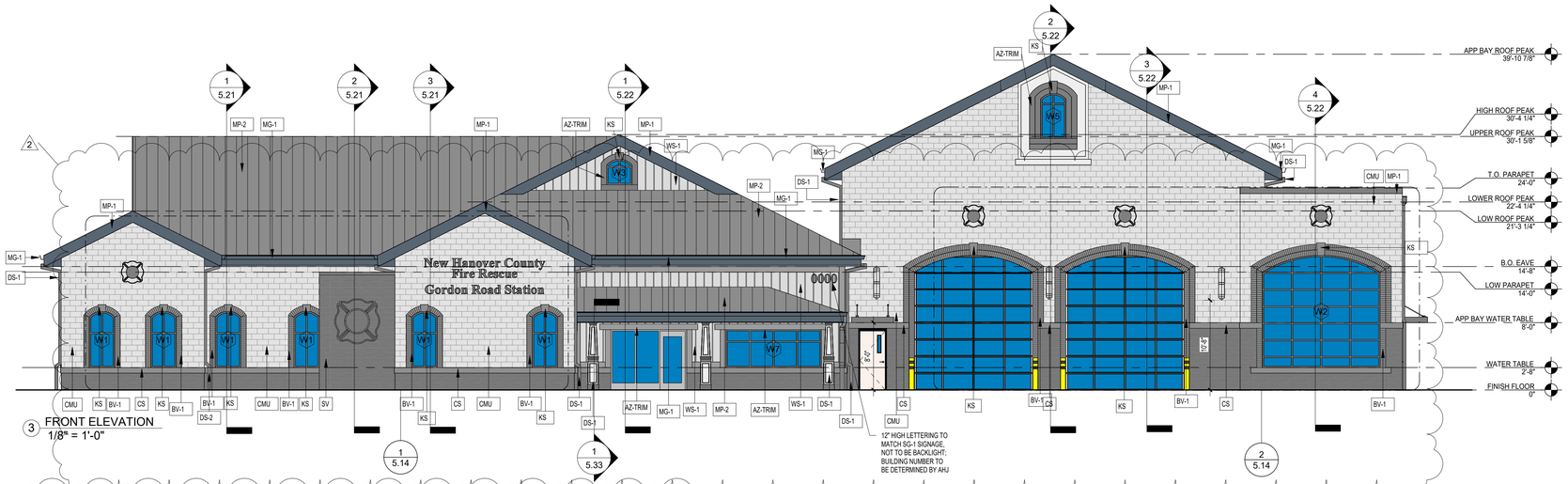
Stewart · Cooper · Newell Architects
1.800.671.0621
www.scn-architects.com

KENNETH C. ARNEY REGISTERED ARCHITECT 6205 NORTH CAROLINA
03.29.2024

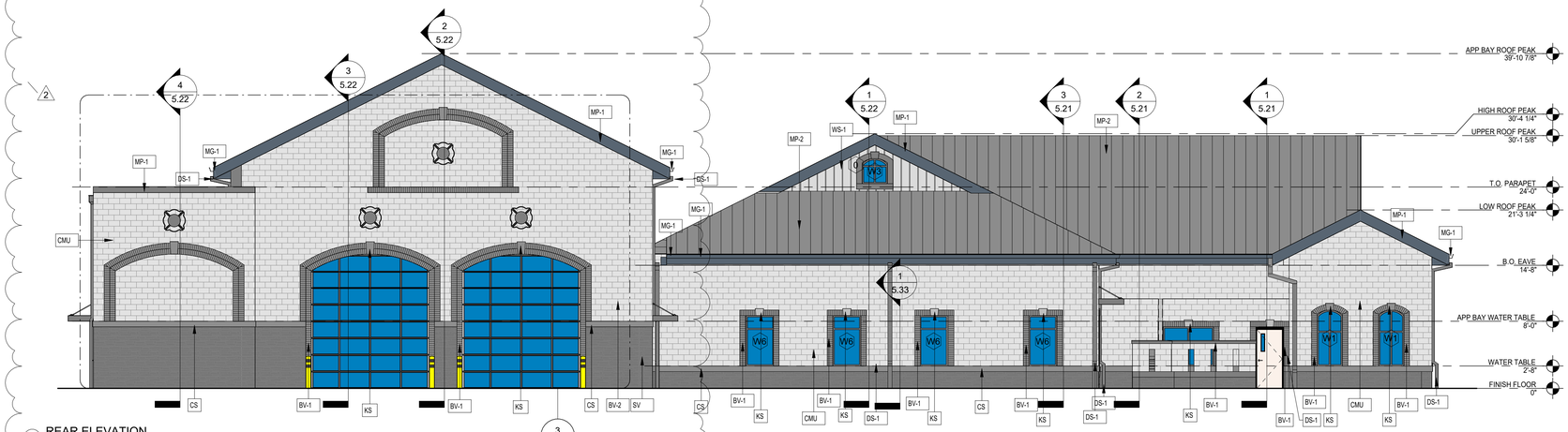
GORDON ROAD FIRE DEPARTMENT

NOTES PLAN

Sheet No.
4.11



3 FRONT ELEVATION
1/8" = 1'-0"



1 REAR ELEVATION
1/8" = 1'-0"

EXTERIOR FINISH MATERIALS:

BRICK VENEER ACCENT TRIM
BV-1 INTERSTATE BRICK; COLOR: MIDNIGHT BLACK, MODULAR WIRECUT

WALL SIDING
WS-1 JAMES HARDIE PRODUCTS; PANEL VERTICAL SIDING (SMOOTH); COLOR: TBD

METAL ROOF
MP-1 METAL ROOFING SYSTEMS, INC. .040 ALUMININUM MRS2500 PROFILE W/ CONCEALED FASTENERS; COLOR: SLATE GRAY (TRIMS)

MP-2 METAL ROOFING SYSTEMS, INC. .040 ALUMININUM MRS2500 PROFILE W/ CONCEALED FASTENERS;COLOR: TUNDRA (ROOF PANELS)

MG-1 METAL ROOFING SYSTEMS, INC. .040 ALUMINUM FLUSH PANEL METAL SOFFIT W/ CONCEALED FASTENERS; COLOR: MATCH MP-2

AZ -TRIM
AZ-TRIM TRIM TO BE AZEC TRADITIONAL 2X12 TRIM OR APPROVED EQUAL; COLOR; PAINT TO MATCH MP-1. FOLLOW MANUFACTUER'S GUDELINES FOR INSTALLATION TO E NSURE PROPER JOINT PLACEMENTS FOR EXPANSION AND CONTRACTION.

SIGNAGE
SG-1 BACKLIT REVESE PAN SIGNAGE. LETTER SIGNAGE ON 2" SPACES; PAINTED TO MATCH MP-2 . COLOR: TBD. LETTERS ARE TO BE INDIVIDUALLY MOUNTED WITHOUT A RAIL; FONT: TIMES NEW ROMAN

KEYSTONE
KS CAST STONE KEYSTONE; CUSTOM COLORED TO MATCH BV-1 (INTEGRAL WATER REPELLENT)

FIREFIGHTER EMBLEM
EMB REVERSE PAN BACKLIT METAL EMBLEM

CAST STONE
CS COLOR: TO MATCH BV-1 (INTEGRAL WATER REPELLENT & STONE ANCHORS REQUIRED)

EXTERIOR MASONRY WALLS
CMU OLD CASTLE SMOOTH FACE BLOCK. COLOR: 4205 CMU TO HAVE INTEGRAL WATER REPELLANT. SEE SPECS

HOLLOW METAL EXTERIOR FRAMES
PRIMED WITH SHERWIN WILLIAMS KEM BOND HS UNIVERSAL METAL PRIMER GRAY B50AZ18; PRO INDUSTRIAL URETHANE ALKYD ENAMEL FINISH COAT COLOR:TBD

METAL GUTTERS & DOWNSPOUTS
MG-1 METAL ROOFING SYSTEMS "STYLE D" GUTTER. SIZE 7" X .040 ALUMINUM. FOLLOW PROFILE SHOWN ON ELEVATIONS PROVIDE PERFORATED ALUMINIM LEAF GUARD FOR ALL GUTTERS

DS-1 DOWNSPOUT - SIZE 4" X 5" X .040 ALUMINUM. FOLLOW PROFILE SHOWN ON ELEVATIONS

FASCIA TRIM
FT COLOR: TO MATCH MP-1

OVERHEAD DOORS
COMMERCIAL SECTIONAL INSULATED OVERHEAD DOOR SEE SPECIFICATION WITH IMPACT GLASS

BIFOLD DOORS
COMMERCIAL INSULATED BYFOLD DOORS

OVERHEAD DOOR FRAMES
PAINT WITH EPOXY; COLOR TO MATCH MP-2

STOREFRONT DOORS & WINDOWS
ALUMINUM STOREFRONT; COLOR: ANODIZED BLACK

PVC ROOFING MEMBRANE
SARNAFIL FULLY ADHERED 80 MIL. PVC ROOFING. COLOR TO BE GRAY TO MATCH MP-2

METAL CANOPY
ML-1 MAPES LUMISHADE (5' W x 3' D); COLOR TO MATCH MP-1

STONE VENEER
SV CORONADO STONE ARTISAN LEDGE PANEL - COLOR: HURON HAND-LAID DRY STACKED

MORTAR - TYPE 'S'
FOR STONE AND BRICK: SUBMIT STANDARD COLOR SAMPLES FOR APPROVAL
FOR CAST STONE: MORTAR JOINT COLOR TO MATCH CAST STONE.
JOINTS TO BE CONCAVE ROUND TOOLED JOINTS

Project No.
1737

Date:
5/9/2024 4:13:50 PM
Drawn by:
AJP/GAS
Checked by:
KCN
Revisions: 2
05.10.2024
ADDENDUM 2

STEWART–COOPER–NEWELL–ARCHITECTS, P.A. REGISTERED ARCHITECTURAL CORPORATION LIC.NO. 51313 NORTH CAROLINA GASTONIA, N.C.

719 East Second Avenue
Gastonia, NC 28054
Phone: 704.865.6311
Fax: 704.865.0346

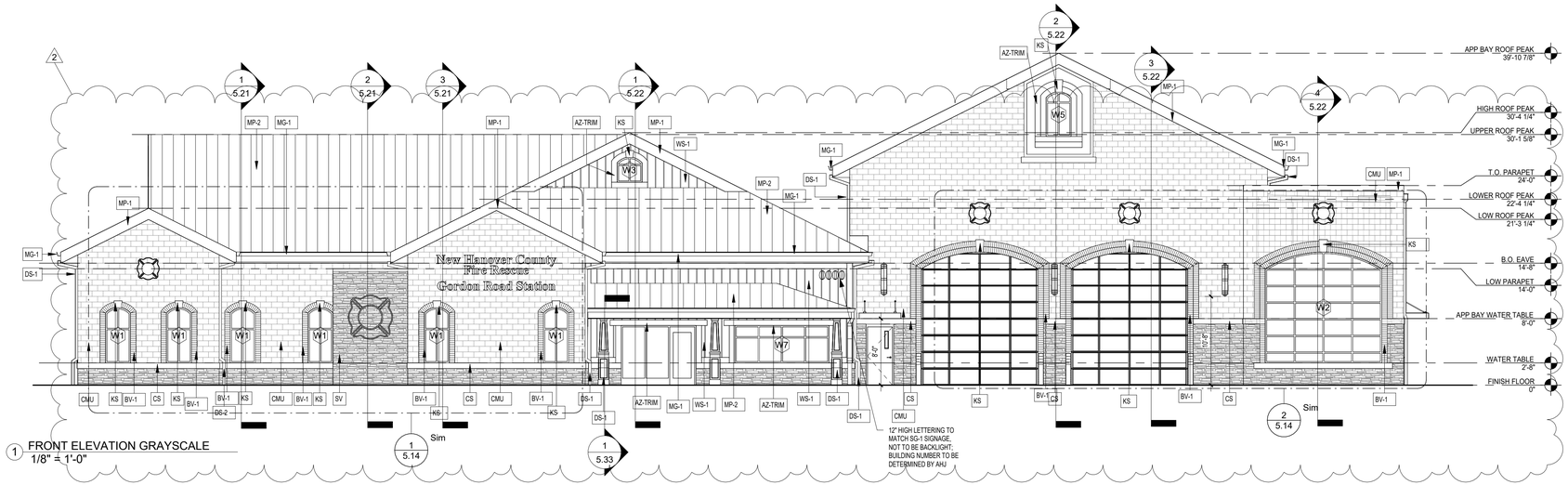
Stewart · Cooper · Newell Architects
1.800.671.0621
www.scn-architects.com

KENNETH C. LISLE REGISTERED ARCHITECT 6205 NORTH CAROLINA
03.29.2024

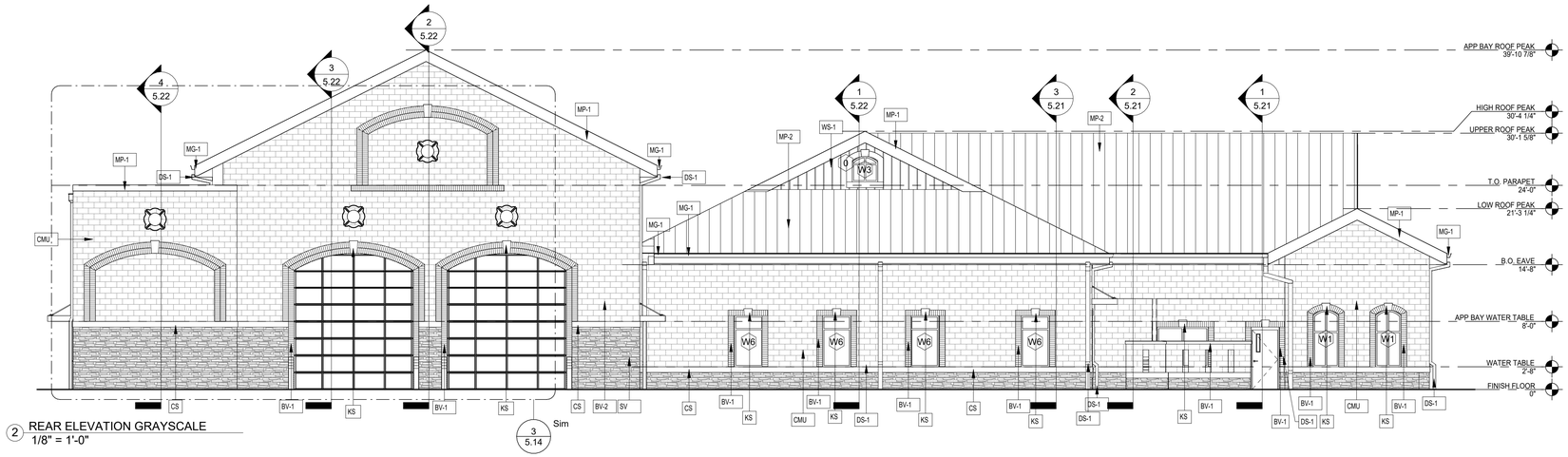
GORDON ROAD FIRE DEPARTMENT

ELEVATIONS COLORED

Sheet No.
5.10



1 FRONT ELEVATION GRAYSCALE
1/8" = 1'-0"



2 REAR ELEVATION GRAYSCALE
1/8" = 1'-0"

EXTERIOR FINISH MATERIALS:

BRICK VENEER ACCENT TRIM
BV-1 INTERSTATE BRICK; COLOR: MIDNIGHT BLACK, MODULAR WIRECUT

WALL SIDING
WS-1 JAMES HARDIE PRODUCTS; PANEL VERTICAL SIDING (SMOOTH); COLOR: TBD

METAL ROOF
MP-1 METAL ROOFING SYSTEMS, INC. .040 ALUMININUM MRS2500 PROFILE W/ CONCEALED FASTENERS; COLOR: SLATE GRAY (TRIMS)

MP-2 METAL ROOFING SYSTEMS, INC. .040 ALUMININUM MRS2500 PROFILE W/ CONCEALED FASTENERS;COLOR: TUNDRA (ROOF PANELS)

CLG-9 METAL ROOFING SYSTEMS, INC. .040 ALUMINUM FLUSH PANEL METAL SOFFIT W/ CONCEALED FASTENERS; COLOR: MATCH MP-2

AZ -TRIM
AZ-TRIM TRIM TO BE AZEC TRADITIONAL 2X12 TRIM OR APPROVED EQUAL; COLOR; PAINT TO MATCH MP-1. FOLLOW MANUFACTUER'S GUDELINES FOR INSTALLATION TO E NSURE PROPER JOINT PLACEMENTS FOR EXPANSION AND CONTRACTION.

SIGNAGE
BACKLIT REVESE PAN SIGNAGE.
SG-1 LETTER SIGNAGE ON 2" SPACES; PAINTED TO MATCH MP-2 . COLOR: TBD. LETTERS ARE TO BE INDIVIDUALLY MOUNTED WITHOUT A RAIL; FONT: TIMES NEW ROMAN

KEYSTONE
KS CAST STONE KEYSTONE; CUSTOM COLORED TO MATCH BV-1 (INTEGRAL WATER REPELLENT)

FIREFIGHTER EMBLEM
EMB REVERSE PAN BACKLIT METAL EMBLEM

CAST STONE
CS COLOR: TO MATCH BV-1 (INTEGRAL WATER REPELLENT & STONE ANCHORS REQUIRED)

EXTERIOR MASONRY WALLS
CMU OLD CASTLE SMOOTH FACE BLOCK. COLOR: 4205
CMU TO HAVE INTEGRAL WATER REPELLANT. SEE SPECS

HOLLOW METAL EXTERIOR FRAMES
PRIMED WITH SHERWIN WILLIAMS KEM BOND HS UNIVERSAL METAL PRIMER GRAY B50AZ18; PRO INDUSTRIAL URETHANE ALKYD ENAMEL FINISH COAT COLOR:TBD

METAL GUTTERS & DOWNSPOUTS
MG-1 METAL ROOFING SYSTEMS "STYLE D" GUTTER. SIZE 7" X .040 ALUMINUM. FOLLOW PROFILE SHOWN ON ELEVATIONS PROVIDE PERFORATED ALUMINIM LEAF GUARD FOR ALL GUTTERS

DS-1 DOWNSPOUT - SIZE 4" X 5" X .040 ALUMINUM. FOLLOW PROFILE SHOWN ON ELEVATIONS

FASCIA TRIM
FT COLOR: TO MATCH MP-1

OVERHEAD DOORS
COMMERCIAL SECTIONAL INSULATED OVERHEAD DOOR SEE SPECIFICATION WITH IMPACT GLASS

BIFOLD DOORS
COMMERCIAL INSULATED BYFOLD DOORS

OVERHEAD DOOR FRAMES
PAINT WITH EPOXY; COLOR TO MATCH MP-2

STOREFRONT DOORS & WINDOWS
ALUMINUM STOREFRONT; COLOR: ANODIZED BLACK

PVC ROOFING MEMBRANE
SARNAFIL FULLY ADHERED 80 MIL. PVC ROOFING. COLOR TO BE GRAY TO MATCH MP-2

METAL CANOPY
ML-1 MAPES LUMISHADE (5' W x 3' D); COLOR TO MATCH MP-1

STONE VENEER
SV CORONADO STONE ARTISAN LEDGE PANEL - COLOR: HURON HAND-LAID DRY STACKED

MORTAR - TYPE 'S'
FOR STONE AND BRICK: SUBMIT STANDARD COLOR SAMPLES FOR APPROVAL
FOR CAST STONE: MORTAR JOINT COLOR TO MATCH CAST STONE.
JOINTS TO BE CONCAVE ROUND TOOLED JOINTS

Project No.
1737

Date:
5/9/2024 4:13:55 PM
Drawn by:
AJP/GAS
Checked by:
KCN
Revisions:
2
05.10.2024
ADDENDUM 2

STEWART-COOPER-NEWELL-ARCHITECTS, P.A. REGISTERED ARCHITECTURE CORPORATION LIC.NO. 51313 NORTH CAROLINA GASTONIA, N.C.

719 East Second Avenue
Gastonia, NC 28054
Phone: 704.865.6311
Fax: 704.865.0046

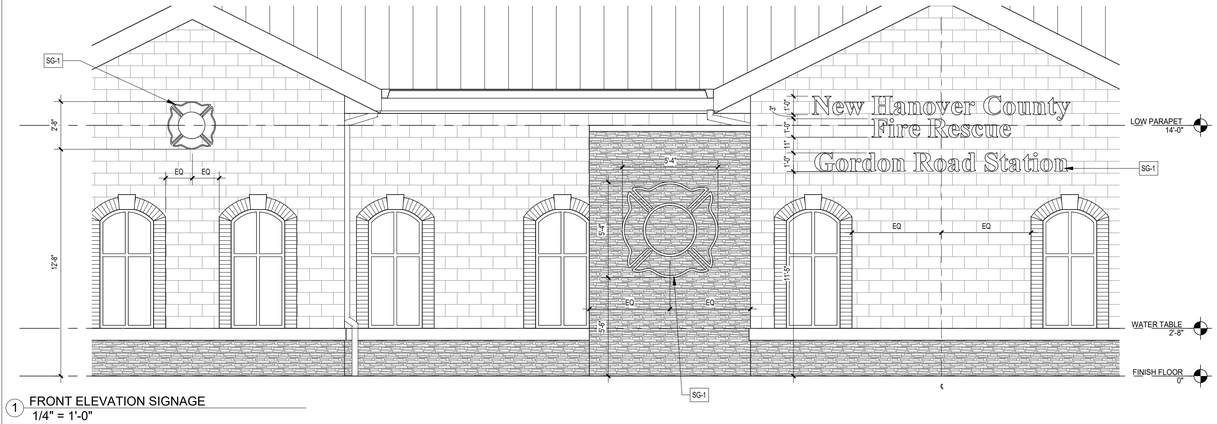
Stewart · Cooper · Newell Architects
1.800.671.0621
www.scn-architects.com

KENNETH C. KEARNEY REGISTERED ARCHITECT 6205 CALIFORNIA
03.29.2024

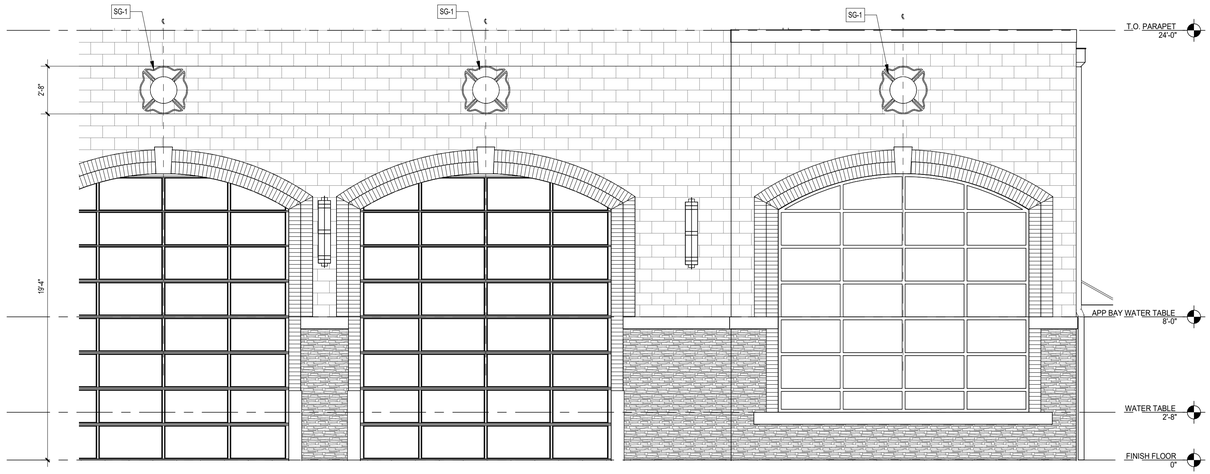
GORDON ROAD FIRE DEPARTMENT

ELEVATIONS GRAYSCALE

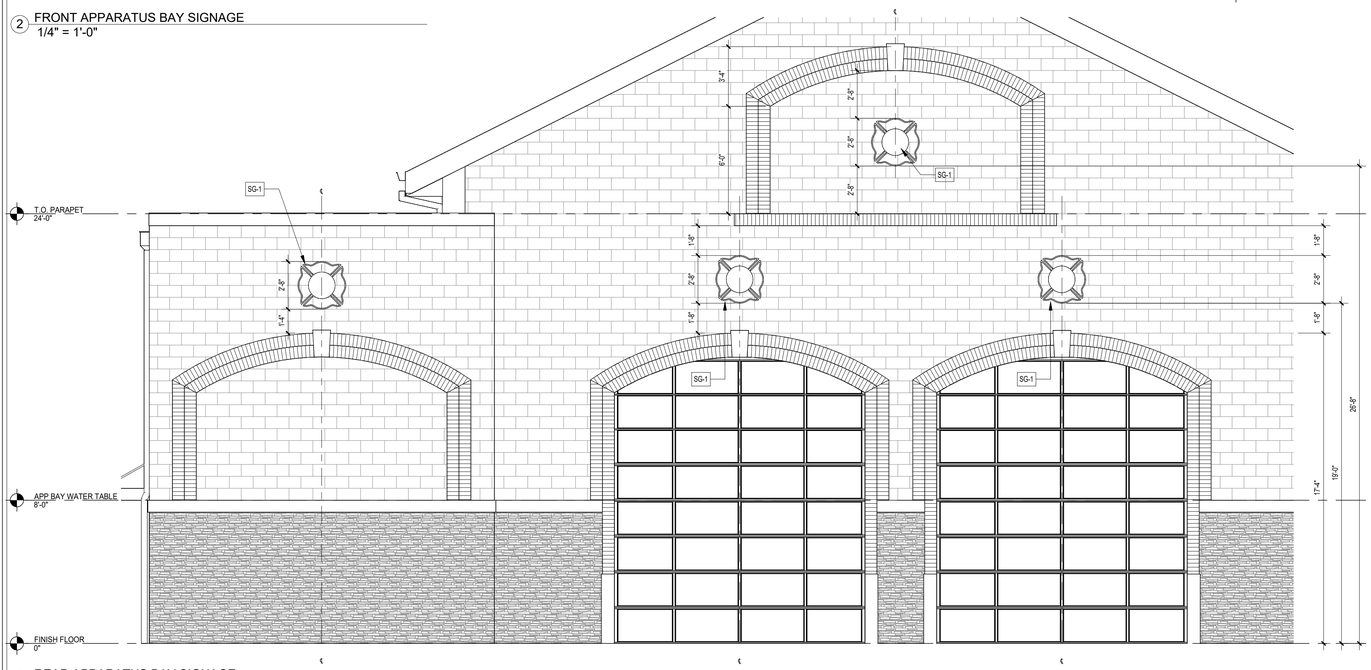
Sheet No.
5.12



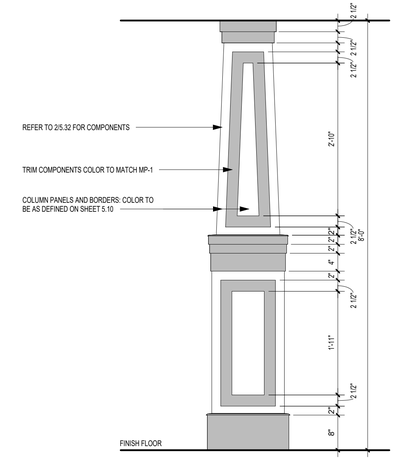
1 FRONT ELEVATION SIGNAGE
1/4" = 1'-0"



2 FRONT APPARATUS BAY SIGNAGE
1/4" = 1'-0"



3 REAR APPARATUS BAY SIGNAGE
1/4" = 1'-0"



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

Project No.
1737

Date:
5/9/2024 4:14:01 PM
Drawn by:
AJP/GAS
Checked by:
KCN
Revisions: 2
05.10.2024
ADDENDUM 2

STEWART–COOPER–NEWELL ARCHITECTS, P.A.
REGISTERED ARCHITECTURAL CORPORATION
LIC.NO. 51313
NORTH CAROLINA
GASTONIA, N.C.

719 East Second Avenue
Gastonia, NC 28054
Phone: 704.865.6311
Fax: 704.865.0046

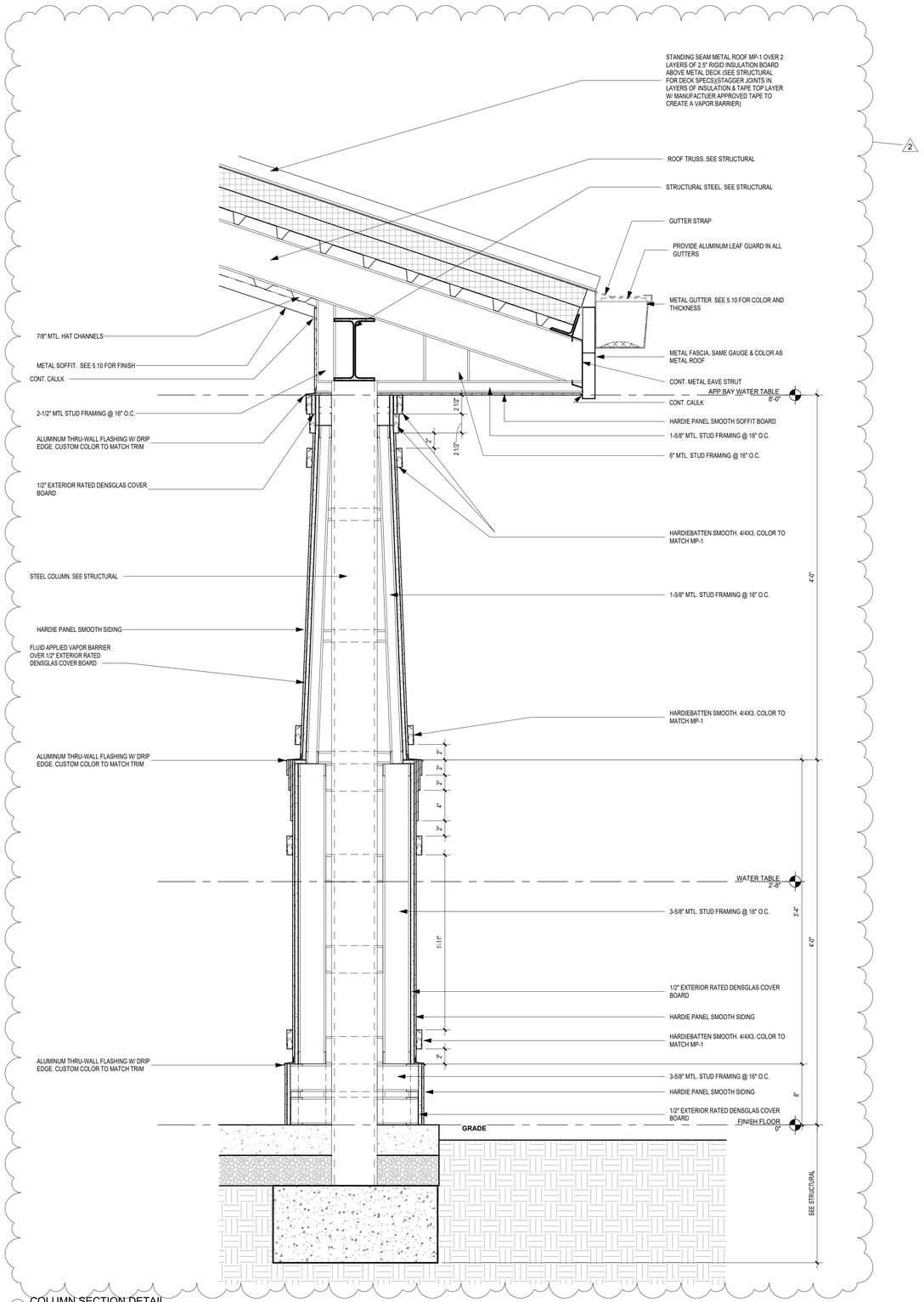
Stewart · Cooper · Newell Architects
1.800.671.0621
www.scn-architects.com

KENNETH C. KNOWLES
REGISTERED ARCHITECT
6205
NORTH CAROLINA
03.29.2024

GORDON ROAD FIRE DEPARTMENT

ELEVATION DETAILS

Sheet No.
5.14



1 COLUMN SECTION DETAIL
1 1/2" = 1'-0"

Project No.
1737

Date:
5/9/2024 4:14:03 PM
Drawn by:
AJP/GAS
Checked by:
KCN
Revisions: 2
05.10.2024
ADDENDUM 2

STEWART-COOPER-NEWELL ARCHITECTS, P.A. REGISTERED ARCHITECTURAL CORPORATION LIC.NO. 51313 NORTH CAROLINA GASTONIA, N.C.

719 East Second Avenue
Gastonia, NC 28054
Phone: 704.865.6311
Fax: 704.865.0046

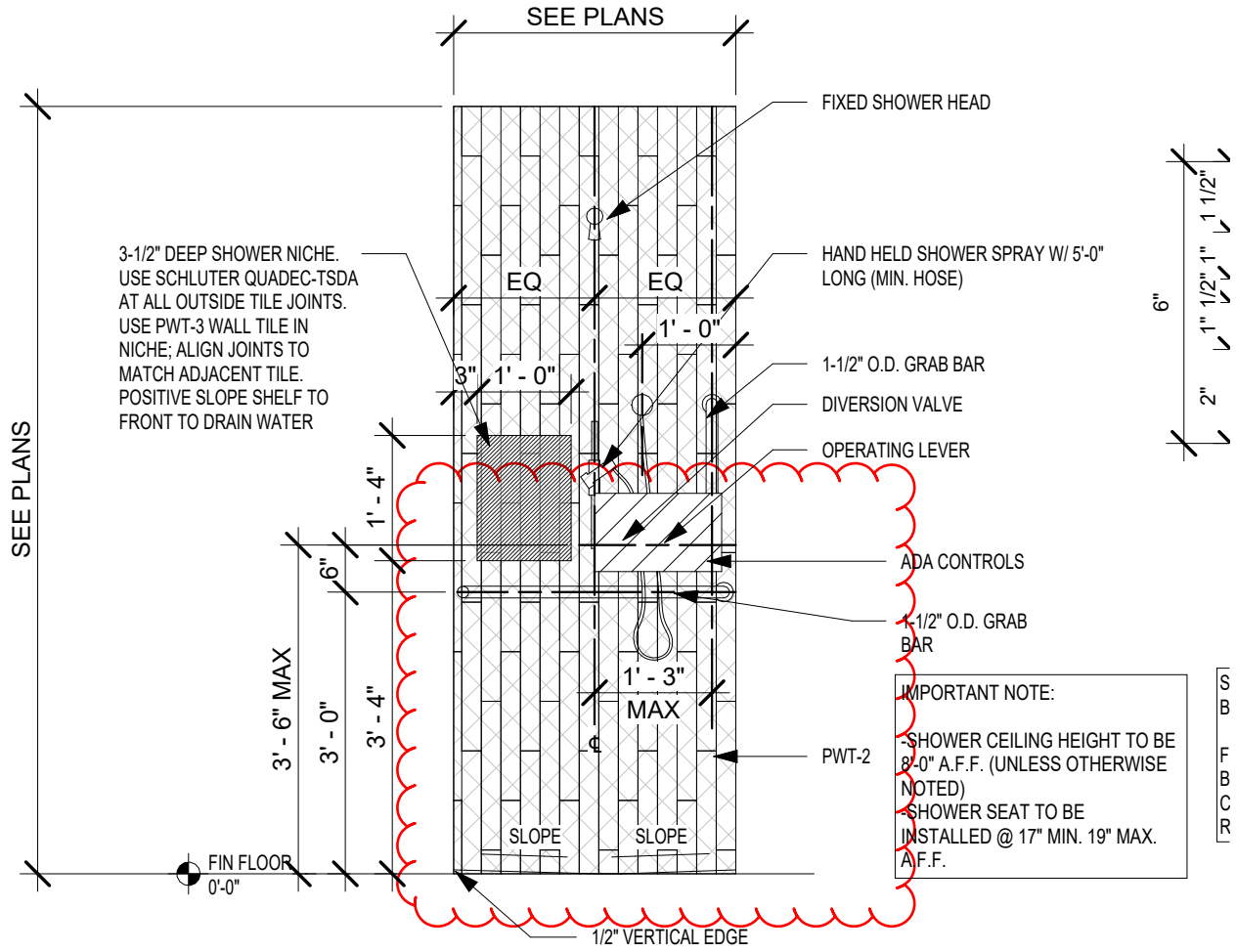
Stewart · Cooper · Newell Architects
1.800.671.0621
www.scn-architects.com

KENNETH C. NEWELL REGISTERED ARCHITECT 6205 NORTH CAROLINA
03.29.2024

GORDON ROAD FIRE DEPARTMENT

WALL SECTION DETAILS

Sheet No.
5.33



SHOWER DETAIL (TILED ONLY)

1/2" = 1'-0"

SEE PLANS

PORCELAIN WALL TILE (NOTED AS PWT - #) ALIGN JOINTS TO PFT

PWT-1	CAESAR CERAMICS: WHISPER COLLECTION; COLOR: BREEZE 303649, HONED; SIZE: 8"x40"; 1/8" JOINT WIDTH UN-SANDED
PWT-2	BEST TILE: ENCHANT COLLECTION; COLOR: SPARK, HONED; SIZE: 2.5"x19" LISTEL MOSAIC; 1/8" JOINT WIDTH UN-SANDED (@DESIGNATED ROOMS & ALL SHOWERS)
GROUT	LATICRETE: SPECTRALOCK PRO EPOXY GROUT; COLOR: #45 RAVEN

Stewart · Cooper · Newell Architects

REFERENCE SHEET NO. 4.80, 7.10

PWT-2 REVISED, PWT-3 REMOVED

5.15.2024

NEW HANOVER COUNTY FIRE AND RESCUE GORDON ROAD STATION

ARCHITECTURAL SUPPLEMENTAL INSTRUCTIONS (ASI)

ASI - 3

SECTION 01 91 13 - GENERAL COMMISSIONING REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

B. OPR and BoD documentation are included by reference for information only.

1.2 SUMMARY

A. Section includes general requirements that apply to implementation of commissioning without regard to specific systems, assemblies, or components.

B. Commissioning is systematic processes to provide documented confirmation that building systems perform according to the criteria set forth in the design intent and satisfy the owner's operational needs. This is achieved by beginning in the design phase and documenting design intent and continuing through construction, acceptance and the warranty period with actual verification of performance. The commissioning process shall encompass and coordinate the traditionally separate functions of system documentation, equipment startup, control system calibration, testing and balancing, performance testing and training.

C. Commissioning during the construction phase is intended to achieve the following specific objectives according to the Contract Documents:

1. Verify that applicable equipment and systems are installed according to the manufacturer's recommendations and to industry accepted minimum standards and that they receive adequate operational checkout by installing contractors.
2. Verify and document proper performance of equipment and systems.
3. Verify that O&M documentation left on site is complete.
4. Verify that the Owner's operating personnel are adequately trained.

D. The commissioning process does not take away from or reduce the responsibility of the system designers or installing contractors to provide a finished and fully functioning product.

E. Abbreviations._ The following are common abbreviations used in the *Specifications* and in the *Commissioning Plan.* Definitions are found in Section 1.3.

A/E-	Architect and design engineers
CxA-	Commissioning authority
CC	Controls contractor
Cx-	Commissioning
Cx Plan-	Commissioning Plan document
EC-	Electrical contractor
FT-	Functional performance test
GC-	General contractor (prime)
MC-	Mechanical contractor
OR-	Owner's Representative
PC-	Prefunctional checklist
PM-	Project manager (of the Owner)
Subs-	Subcontractors to General
TAB-	Test and balance contractor

F. Related Sections:

1. Division 22 Section "Commissioning of Plumbing" for commissioning process activities for plumbing systems, assemblies, equipment, and components.

2. Division 23 Section "Commissioning of HVAC" for commissioning process activities for HVAC&R systems, assemblies, equipment, and components.

3. Division 26 Section "Commissioning of Electrical Systems" for commissioning process activities for integrated automation systems, assemblies, equipment, and components.

1.3 DEFINITIONS

A. Acceptance Phase. Phase of construction after startup and initial checkout when functional performance tests, O&M documentation review and training occurs.

B. Approval. Acceptance that a piece of equipment or system has been properly installed and is functioning in the tested modes according to the Contract Documents.

C. Architect/Engineer (A/E): The prime consultant (architect) and sub-consultants who comprise the design team, generally the HVAC mechanical designer/engineer and the electrical designer/engineer.

D. BoD: Basis of Design. A document that records concepts, calculations, decisions, and product selections used to meet the OPR and to satisfy applicable regulatory requirements, standards, and guidelines. The document includes both narrative descriptions and lists of individual items that support the design process.

E. CxA: Commissioning Authority. An independent agent, not otherwise associated with the A/E team members or the Contractor, hired by the Owner. The CxA directs and coordinates the day-to-day commissioning activities. The CxA does not take an oversight role like the OR. The CxA shall report directly to the OR.

F. Cx Plan: Commissioning Plan: A document that outlines the organization, schedule, allocation of resources, and documentation requirements of the commissioning process

G. Datalogging: Monitoring flows, currents, status, pressures, etc. of equipment using stand-alone dataloggers separate from the control system.

H. Deferred Functional Tests : FTs that are performed later, after substantial completion, due to partial occupancy, equipment, seasonal requirements, design or other site conditions that disallow the test from being performed.

I. Deficiency : A condition in the installation or function of a component, piece of equipment or system that is not in compliance with the Contract Documents (that is, does not perform properly or is not complying with the design intent)

J. Design Intent: A dynamic document that provides the explanation of the ideas, concepts and criteria that are considered to be very important to the owner. It is initially the outcome of the programming and conceptual design phases.

K. Design Narrative or Design Documentation: Sections of either the Design Intent or Basis of Design.

L. Factory Testing: Testing of equipment on-site or at the factory by factory personnel with an Owner's representative present.

M. Functional Performance Test (FT): Test of the dynamic function and operation of equipment and systems using manual (direct observation) or monitoring methods. Functional testing is the dynamic testing of systems (rather than just components) under full operation (e.g., the chiller pump is tested interactively with the chiller functions to see if the pump ramps up and down to maintain the differential pressure setpoint). Systems are tested under various modes, such as during low cooling or heating loads, high loads, component failures, unoccupied, varying outside air temperatures, fire alarm, power failure, etc. The systems are run through all the control system's sequences of operation and components are verified to be responding as the sequences state. Traditional air or water test and balancing (TAB) is not functional testing, in the commissioning sense of the word. TAB's primary work is setting up the system flows and pressures as specified, while functional testing is verifying that which has already been set up. The commissioning authority develops the functional test procedures in a sequential written form, coordinates, oversees and documents the actual testing, which is usually performed by the installing contractor or vendor. FTs are performed after prefunctional checklists and startup are complete.

N. General Contractor (GC): The prime contractor for this project. Generally refers to all the GC's subcontractors as well. Also referred to as the Contractor, in some contexts.

O. Indirect Indicators: Indicators of a response or condition, such as a reading from a control system screen reporting a damper to be 100% closed

P. Manual Test: Using hand-held instruments, immediate control system readouts or direct observation to verify performance (contrasted to analyzing monitored data taken over time to make the "observation").

Q. Monitoring: The recording of parameters (flow, current, status, pressure, etc.) of equipment operation using dataloggers or the trending capabilities of control systems.

R. Non-Compliance: See Deficiency.

S. Non-Conformance: See Deficiency.

T. Over-written Value: Writing over a sensor value in the control system to see the response of a system (e.g., changing the outside air temperature value from 50F to 75F to verify economizer operation). See also "Simulated Signal."

U. OPR: Owner's Project Requirements. A document that details the functional requirements of a project and the expectations of how it will be used and operated. These include Project goals, measurable performance criteria, cost considerations, benchmarks, success criteria, and supporting information.

V. Prefunctional Checklist (PC): A list of items to inspect and elementary component tests to conduct to verify proper installation of equipment, provided by the CxA to the Sub.

Prefunctional checklists are primarily static inspections and procedures to prepare the equipment or system for initial operation (e.g., belt tension, oil levels OK, labels affixed, gages in place, sensors calibrated, etc.). However, some prefunctional checklist items entail simple testing of the function of a component, a piece of equipment or system (such as measuring the voltage imbalance on a three phase pump motor of a chiller system). The word prefunctional refers to before functional testing. Prefunctional checklists augment and are combined with the manufacturer's start-up checklist. Even without a commissioning process, contractors typically perform some, if not many, of the prefunctional checklist items a commissioning authority will recommend. However, few contractors document in writing the execution of these checklist items. Therefore, for most equipment, the contractors execute the checklists on their own. The commissioning authority only requires that the procedures be documented in writing, and does not witness much of the prefunctional checklisting, except for larger or more critical pieces of equipment.

W. Sampling: Functionally testing only a fraction of the total number of identical or near identical pieces of equipment.

X. Seasonal Performance Tests: FT that are deferred until the system(s) will experience conditions closer to their design conditions.

Y. Simulated Condition: Condition that is created for the purpose of testing the response of a system (e.g., applying a hair blower to a space sensor to see the response in a VAV box).

Z. Simulated Signal: Disconnecting a sensor and using a signal generator to send an amperage, resistance or pressure to the transducer and DDC system to simulate a sensor value.

AA. Systems, Subsystems, Equipment, and Components: Where these terms are used together or separately, they shall mean "as-built" systems, subsystems, equipment, and components.

BB. Startup: The initial starting or activating of dynamic equipment, including executing prefunctional checklists.

CC. Subs: The subcontractors to the GC who provide and install building components and systems.

DD. Test Procedures: The step-by-step process which must be executed to fulfill the test requirements. The test procedures are developed by the CxA.

EE. Test Requirements: Requirements specifying what modes and functions, etc. shall be tested. The test requirements are not the detailed test procedures. The test requirements are specified in the Contract Documents

FF. Trending: Monitoring using the building control system.

GG. Vendor: Supplier of equipment.

HH. Warranty Period: Warranty period for entire project, including equipment components. Warranty begins at Substantial Completion and extends for at least one year, unless specifically noted otherwise in the Contract Documents and accepted submittals.

1.4 COORDINATION

A. **Commissioning Team**. The members of the commissioning team consist of the Commissioning authority (CxA), the Owner's Representative (OR), the General Contractor (GC or Contractor), the architect and design engineers (particularly the mechanical engineer), the Mechanical Contractor (MC), the Electrical Contractor (EC), the TAB representative, the Controls Contractor (CC), any other installing subcontractors or suppliers of equipment. If known, the Owner's building or plant operator/engineer is also a member of the commissioning team.

B. **Management**. The CxA is hired by the Owner directly. The CxA directs and coordinates the commissioning activities and the reports to the OR. All members work together to fulfill their contracted responsibilities and meet the objectives of the Contract Documents.

C. **Scheduling**. The CxA will work with the OR and GC according to established protocols to schedule the commissioning activities. The CxA will provide sufficient notice to the OR and GC for scheduling commissioning activities. The GC will integrate all commissioning activities into the master schedule. All parties will address scheduling problems and make necessary notifications in a timely manner in order to expedite the commissioning process.

D. The CxA will provide the initial schedule of primary commissioning events at the commissioning scoping meeting. The *Commissioning Plan—Construction Phase* provides a format for this schedule. As construction progresses more detailed schedules are developed by the CxA. The Commissioning Plan also provides a format for detailed schedules.

1.5 COMMISSIONING PROCESS

A. **Commissioning Plan**. The commissioning plan provides guidance in the execution of the commissioning process. Just after the initial commissioning scoping meeting the CxA will update the plan which is then considered the "final" plan, though it will continue to evolve and expand as the project progresses. The *Specifications* will take precedence over the *Commissioning Plan*.

B. **Commissioning Process**. The following narrative provides a brief overview of the typical commissioning tasks during construction and the general order in which they occur.

1. Commissioning during construction begins with a scoping meeting conducted by the CxA where the commissioning process is reviewed with the commissioning team members.
2. Additional meetings will be required throughout construction, scheduled by the CxA with necessary parties attending, to plan, scope, coordinate, schedule future activities and resolve problems.
3. Equipment documentation is submitted to the CxA during normal submittals, including detailed start-up procedures, and OMs.
4. The CxA works with the Subs in developing startup plans and startup documentation formats, including providing the Subs with prefunctional checklists to be completed, during the startup process by the installing contractors.
5. In general, the checkout and performance verification proceeds from simple to complex; from component level to equipment to systems and intersystem levels with prefunctional checklists being completed before functional testing.
6. The Subs, under their own direction, execute and document the prefunctional checklists and perform startup and initial checkout. The CxA documents that the checklists and

startup were completed according to the approved plans. This may include the CxA witnessing start-up of selected equipment. 48hr notice of intent to perform startup.

7. The CxA develops specific equipment and system functional performance test procedures. The Subs review the procedures.
8. The procedures are executed by the Subs, under the direction of, and documented by the CxA.
9. Items of non-compliance in material, installation or setup are corrected at the Sub's expense and the system retested.
10. The CxA reviews the O&M documentation for completeness.
11. Commissioning is completed before Substantial Completion.
12. The CxA reviews, pre-approves and coordinates the training provided by the Subs and verifies that is was completed.
13. Deferred testing is conducted, as specified or required.

1.6 COMMISSIONING TEAM

A. Members Appointed by Contractor(s): Individuals, each having the authority to act on behalf of the entity he or she represents, explicitly organized to implement the commissioning process through coordinated action. The commissioning team shall consist of, but not be limited to, the Owner's Representative (OR) and representatives of the Contractor, including Project superintendent and subcontractors, installers, suppliers, and specialists deemed appropriate by the CxA.

B. Members Appointed by Owner:

1. CxA: The designated person, company, or entity that plans, schedules, and coordinates the commissioning team to implement the commissioning process. Owner will engage the CxA under a separate contract.
2. Representatives of the facility user and operation and maintenance personnel.
3. The Owners Representative.
4. Architect and engineering design professionals.

1.7 OWNER'S RESPONSIBILITIES

A. Work with the CxA and Contractor to develop the OPR documentation for information and use.

B. Assign operation and maintenance personnel and schedule them to participate in commissioning team activities.

C. Provide the BoD documentation, prepared by Architect and approved by Owner, to the CxA and Contractor for use in developing the commissioning plan, systems manual, and operation and maintenance training plan.

D. Follow the Commissioning Plan.

E. Attend commissioning scoping meetings and additional meetings as necessary.

1.8 OWNERS REPRESENTATIVE'S RESPONSIBILITIES

A. The Owner's Representative OR shall represent the Owner during the commissioning process as follows:

1. Manage the contract of the A/E, CxA, OR and Contractor.
2. Arrange for facility operating and maintenance personnel to attend various field commissioning activities and field training sessions according to the *Commissioning Plan – Construction Phase.*
3. Provide final approval for the completion of the commissioning work.
4. Ensure that any seasonal or deferred testing and any deficiency issues are addressed.
5. Follow the Commissioning Plan.
6. Attend commissioning scoping meetings and additional meetings as necessary.

1.9 ARCHITECT/ENGINEERS (AE) RESPONSIBILITIES

A. The AE shall participate in and perform commissioning process activities including, but not limited to, the following:

1. Attend the commissioning scoping meeting and selected commissioning team meetings.
2. Perform normal submittal review, construction observation, as-built drawing preparation, O&M manual preparation, etc., as contracted.
3. Provide any design narrative and sequence documentation requested by the CxA. The designers shall assist (along with the contractors) in clarifying the operation and control of commissioned equipment in areas where the specifications, control drawings or equipment documentation is not sufficient for writing detailed testing procedures.
4. Coordinate resolution of system deficiencies identified during commissioning, according to the contract documents.
5. Prepare and submit final as-built design intent documentation for inclusion in the O&M manuals. Review and approve the O&M manuals.
6. Coordinate resolution of design non-conformance and design deficiencies identified during warranty-period commissioning.
7. Participate in the resolution of non-compliance, non-conformance and design deficiencies identified during commissioning during warranty-period commissioning.
8. Furnish a copy of all construction documents, addenda, requests for information, change orders and approved submittals and shop drawings related to commissioned equipment to the CxA.

1.10 CONSTRUCTION MANAGER'S (CM) RESPONSIBILITIES **(N/A)**

1.11 CONTRACTOR'S RESPONSIBILITIES

A. Contractor shall assign representatives with expertise and authority to act on its behalf and shall schedule them to participate in and perform commissioning process activities including, but not limited to, the following:

1. Evaluate performance deficiencies identified in test reports and, in collaboration with entity responsible for system and equipment installation, recommend corrective action.
2. Cooperate with the CxA for resolution of issues recorded in the Issues Log.
3. Attend commissioning team meetings held as required.

4. Integrate and coordinate commissioning process activities with construction schedule.
5. Review commissioning progress and deficiency reports.
6. Review and accept construction checklists provided by the CxA.
7. Complete paper or electronic construction checklists as work is completed and provide to the CxA on a weekly basis.
8. Review and accept commissioning process test procedures provided by the Commissioning Authority.
9. Complete commissioning process test procedures.
10. Include the cost of commissioning in the total contract price.
11. Coordinate the training of Owner personnel and provide the times and dates of training to the CxA.
12. Execute seasonal or deferred functional performance testing witnessed by the CxA to facilitate the Cx process.
13. Provide a list of final settings, setpoints, ranges, schedules, and / or trend logs required by the CxA.
14. Follow the Commissioning Plan.
15. Attend commissioning scoping meetings and additional meetings as necessary.
16. From the red-line drawings, edit and update one-line diagrams developed as part of the design narrative documentation and those provided by the vendor as shop drawings for the chilled and hot water, condenser water, domestic water, supply, return and exhaust air systems and power system.

1.12 SUB CONTRACTOR'S RESPONSIBILITIES

A. Contractor shall assign representatives with expertise and authority to act on its behalf and shall schedule them to participate in and perform commissioning process activities including, but not limited to, the following:

1. Provide all requested submittal data, including detailed start-up procedures and specific responsibilities of the Owner to keep warranties in force.
2. Assist in equipment testing per agreements with Prime.
3. Include all special tools and instruments (only available from vendor, specific to a piece of equipment) required for testing equipment according to these Contract Documents in the base bid price to the Contractor, except for stand-alone data logging equipment that may be used by the CxA.
4. Provide information requested by CxA regarding equipment sequence of operation and testing procedures.
5. Review test procedures for equipment installed by factory representatives.
6. Follow the Commissioning Plan.
7. Attend commissioning scoping meetings and additional meetings as necessary.

1.13 EQUIPMENT SUPPLIERS RESPONSIBILITIES

A. The equipment suppliers shall assign representatives with expertise and authority to act on its behalf and shall schedule them to participate in and perform commissioning process activities including, but not limited to, the following:

1. Provide all requested submittal data, including detailed start-up procedures and specific responsibilities of the Owner to keep warranties in force.
2. Assist in equipment testing per agreements with Subs.
3. Include all special tools and instruments (only available from vendor, specific to a piece of equipment) required for testing equipment according to these Contract Documents in the

base bid price to the Contractor, except for stand-alone datalogging equipment that may be used by the CxA.

4. Through the contractors they supply products to, analyze specified products and verify that the designer has specified the newest most updated equipment reasonable for this project's scope and budget.
5. Provide information requested by CxA regarding equipment sequence of operation and testing procedures.
6. Review test procedures for equipment installed by factory representatives.
7. Follow the Commissioning Plan.
8. Attend commissioning scoping meetings and additional meetings as necessary.

1.14 CxA'S RESPONSIBILITIES

A. The CxA is not responsible for design concept, design criteria, compliance with codes, design or general construction scheduling, cost estimating, or construction management. The CxA may assist with problem-solving non-conformance or deficiencies, but ultimately that responsibility resides with the general contractor and the A/E. The primary role of the CxA is to develop and coordinate the execution of a testing plan, observe and document performance—that systems are functioning in accordance with the documented design intent and in accordance with the Contract Documents. The Contractors will provide all tools or the use of tools to start, check-out and functionally test equipment and systems, except for specified testing with portable data-loggers, which shall be supplied and installed by the CxA.

1. Coordinates and directs the commissioning activities using consistent protocols and forms, centralized documentation, clear and regular communications and consultations with all necessary parties, frequently updated timelines and schedules and technical expertise.
2. Coordinate the commissioning work and, with the GC and OR, ensure that commissioning activities are being scheduled into the master schedule.
3. Revise, as necessary, the *Commissioning Plan—Construction Phase.*
4. Plan and conduct a commissioning scoping meeting and other commissioning meetings.
5. Request and review additional information required to perform commissioning tasks, including O&M materials, contractor start-up and checkout procedures.
6. Before startup, gather and review the current control sequences and interlocks and work with contractors and design engineers until sufficient clarity has been obtained, in writing, to be able to write detailed testing procedures.
7. Review and comment on normal Contractor submittals applicable to systems being commissioned for compliance with commissioning needs, concurrent with the A/E reviews.
8. Write and distribute prefunctional tests and checklists.
9. Develop an enhanced start-up and initial systems checkout plan with Subs.
10. Perform site visits, as necessary, to observe component and system installations. Attends selected planning and job-site meetings to obtain information on construction progress. Review construction meeting minutes for revisions/substitutions relating to the commissioning process. Assist in resolving any discrepancies.
11. Witness all or part of the HVAC piping test and flushing procedure, sufficient to be confident that proper procedures were followed. Document this testing and include the documentation in O&M manuals. Notify owner's representative of any deficiencies in results or procedures.
12. Witness all or part of any ductwork testing and cleaning procedures, sufficient to be confident that proper procedures were followed. Document this testing and include the documentation in O&M manuals. Notify owner's representative of any deficiencies in results or procedures.

13. Approve prefunctional tests and checklist completion by reviewing prefunctional checklist reports and by selected site observation and spot checking.
14. Approve systems startup by reviewing start-up reports and by selected site observation.
15. Review TAB execution plan.
16. Oversee sufficient functional testing of the control system and approve it to be used for TAB, before TAB is executed.
17. Approve air and water systems balancing by spot testing, by reviewing completed reports and by selected site observation.
18. With necessary assistance and review from installing contractors, write the functional performance test procedures for equipment and systems. This may include energy management control system trending, stand-alone datalogger monitoring or manual functional testing. Submit to OR for review, and for approval if required.
19. Analyze any functional performance trend logs and monitoring data to verify performance.
20. Coordinate, witness and approve manual functional performance tests performed by installing contractors. Coordinate retesting as necessary until satisfactory performance is achieved.
21. Maintain a master deficiency and resolution log and a separate testing record. Provide the OR with written progress reports and test results with recommended actions.
22. Review equipment warranties to ensure that the Owner's responsibilities are clearly defined.
23. Oversee and approve the training of the Owner's operating personnel.
24. Compile and maintain a commissioning record and building systems book(s).
25. Review and approve the preparation of the O&M manuals.
26. Provide a final commissioning report.
27. Coordinate and supervise required seasonal or deferred testing and deficiency corrections.
28. Return to the site at 10 months into the 12 month warranty period and review with facility staff the current building operation and the condition of outstanding issues related to the original and seasonal commissioning. Also interview facility staff and identify problems or concerns they have operating the building as originally intended. Make suggestions for improvements and for recording these changes in the O&M manuals. Identify areas that may come under warranty or under the original construction contract. Assist facility staff in developing reports, documents and requests for services to remedy outstanding problems.

1.15 SYSTEMS TO BE COMMISSIONED

A. The following HVAC systems will be commissioned in this project.

1. ***Split System Air Conditioning Unit***
2. ***Exhaust Fans and Ventilation***
3. ***High Volume Bay Fans***
4. ***Infrared Heating System***
5. ***Ductless Split Systems***
6. ***Duct Work***
7. ***Testing, Adjusting, Balancing***
8. ***Building Automation System***

B. The following Plumbing systems will be commissioned in this project.

1. ***Domestic Hot Water System***
2. ***Domestic Water Heater***
3. ***Hot Water Circulating Pump***

C. The following Electrical systems will be commissioned in this project.

1. ***Lighting Controls***

PART 2 - PRODUCTS

2.1 TEST EQUIPMENT

A. All standard testing equipment required to perform startup and initial checkout and required functional performance testing shall be provided by the Division contractor for the equipment being tested. For example, the mechanical contractor of Division 23 shall ultimately be responsible for all standard testing equipment for the HVAC system and controls system in Division 23, except for equipment specific to and used by TAB in their commissioning responsibilities. Two-way radios shall be provided by the Division Contractor.

B. Special equipment, tools and instruments (only available from vendor, specific to a piece of equipment) required for testing equipment, according to these Contract Documents shall be included in the base bid price to the Contractor and left on site, except for stand-alone datalogging equipment that may be used by the CxA.

C. Datalogging equipment and software required to test equipment will be provided by the CxA, but shall not become the property of the Owner.

D. All testing equipment shall be of sufficient quality and accuracy to test and/or measure system performance with the tolerances specified in the *Specifications.* If not otherwise noted, the following minimum requirements apply: Temperature sensors and digital thermometers shall have a certified calibration within the past year to an accuracy of 0.5°F and a resolution of + or - 0.1°F. Pressure sensors shall have an accuracy of + or - 2.0% of the value range being measured (not full range of meter) and have been calibrated within the last year. All equipment shall be calibrated according to the manufacturer's recommended intervals and when dropped or damaged. Calibration tags shall be affixed or certificates readily available.

E. Refer to Section 019113, Part 3.6 E for details regarding equipment that may be required to simulate required test conditions.

PART 3 - EXECUTION

3.1 MEETINGS

A. Scoping Meeting. Within 90 days of commencement of construction, the CxA will schedule, plan and conduct a commissioning scoping meeting with the entire commissioning team in attendance. Meeting minutes will be distributed to all parties by the CxA. Information gathered from this meeting will allow the CxA to revise the *Commissioning Plan* to its "final" version, which will also be distributed to all parties.

B. Miscellaneous Meetings. Other meetings will be planned and conducted by the CxA as construction progresses. These meetings will cover coordination, deficiency resolution and planning issues with particular Subs. The CxA will plan these meetings and will minimize unnecessary time being spent by Subs. These meetings may be as required. During the final 3 months of construction they may be held as frequently as one per week. Meetings attendance is required during warranty period to verify corrective action to outstanding deviancies, perform seasonal testing, and conduct ten month warranty walkthrough.

3.2 REPORTING

A. The CxA will provide regular reports to the OR, with increasing frequency as construction and commissioning progresses. Standard forms are provided and referenced in the *Commissioning Plan.*

B. The CxA will regularly communicate with all members of the commissioning team, keeping them apprised of commissioning progress and scheduling changes through memos, progress reports, etc.

C. Testing or review approvals and non-conformance and deficiency reports are made regularly with the review and testing as described in later sections.

D. A final summary report (about four to six pages, not including backup documentation) by the CxA will be provided to the OR, focusing on evaluating commissioning process issues and identifying areas where the process could be improved. All acquired documentation, logs, minutes, reports, deficiency lists, communications, findings, unresolved issues, etc., will be compiled in appendices and provided with the summary report. Prefunctional checklists, functional tests and monitoring reports will not be part of the final report, but will be stored in the Commissioning Record in the O&M manuals.

3.3 SUBMITTALS

A. The CxA will provide appropriate contractors with a specific request for the type of submittal documentation the CxA requires to facilitate the commissioning work. These requests will be integrated into the normal submittal process and protocol of the construction team. At minimum, the request will include the manufacturer and model number, the manufacturer's printed installation and detailed start-up procedures, full sequences of operation, O&M data, performance data, any performance test procedures, control drawings and details of owner contracted tests. In addition, the installation and checkout materials that are actually shipped inside the equipment and the actual field checkout sheet forms to be used by the factory or field

technicians shall be submitted to the Commissioning authority. All documentation requested by the CxA will be included by the Subs in their O&M manual contributions.

1. Requested Submittals:
   a. Refer to Section 019113-10 Part 1.15 Systems to be Commissioned

B. The Commissioning authority will review and provide comment on submittals related to the commissioned equipment for conformance to the Contract Documents as it relates to the commissioning process, to the functional performance of the equipment and adequacy for developing test procedures. This review is intended primarily to aid in the development of functional testing procedures and only secondarily to verify compliance with equipment specifications. The Commissioning authority will notify the OR, Owner Representative, or A/E as requested, of items missing or areas that are not in conformance with Contract Documents and which require resubmission.

C. The CxA may request additional design narrative from the A/E and Controls Contractor, depending on the completeness of the design intent documentation and sequences provided with the Specifications.

D. These submittals to the CxA do not constitute compliance for O&M manual documentation. The O&M manuals are the responsibility of the Contractor, though the CxA will review and approve them.

E. Contractor's responsibility for deviations in submittals from requirements of the Contract Documents is not relieved by the Commissioning Authority's review.

3.4 START-UP, PREFUNCTIONAL CHECKLISTS AND INITIAL CHECKOUT

A. The following procedures apply to all equipment to be commissioned, according to Section 1.15, Systems to be commissioned. Some systems that are not comprised so much of actual dynamic machinery, e.g., electrical system power quality, may have very simplified PFCs and startup.

B. **General.** Prefunctional checklists are important to ensure that the equipment and systems are hooked up and operational. It ensures that functional performance testing (in-depth system checkout) may proceed without unnecessary delays. Each piece of equipment receives full prefunctional checkout. No sampling strategies are used. The prefunctional testing for a given system must be successfully completed prior to formal functional performance testing of equipment or subsystems of the given system.

C. **Start-up and Initial Checkout Plan.** The CxA shall assist the commissioning team members responsible for startup of any equipment in developing detailed start-up plans for all equipment. The primary role of the CxA in this process is to ensure that there is written documentation that each of the manufacturer-recommended procedures have been completed. Parties responsible for prefunctional checklists and startup are identified in the commissioning scoping meeting and in the checklist forms. Parties responsible for executing prefunctional performance tests are identified in the testing requirements in Sections ***220800, 230800, and 260800.***

1. The CxA develops prefunctional checklists and procedures. These checklists indicate required procedures to be executed as part of startup and initial checkout of the systems and the party responsible for their execution.
2. These checklists and tests are provided by the CxA to the Contractor. The Contractor determines which trade is responsible for executing and documenting each of the line

item tasks and notes that trade on the form. Each form will have more than one trade responsible for its execution.

3. The subcontractor responsible for the purchase of the equipment develops the full start-up plan by combining (or adding to) the CxA's checklists with the manufacturer's detailed start-up and checkout procedures from the O&M manual and the normally used field checkout sheets. The plan will include checklists and procedures with specific boxes or lines for recording and documenting the checking and inspections of each procedure and a summary statement with a signature block at the end of the plan. The full start-up plan could consist of something as simple as:

    a. The CxA's prefunctional checklists.
    b. The manufacturer's standard written start-up procedures copied from the installation manuals with check boxes by each procedure and a signature block added by hand at the end.
    c. The manufacturer's or contractors normally used field checkout sheets.
    d. Any forms required for warranty submission

4. The subcontractor submits the full startup plan to the CxA for review and approval.
5. The CxA reviews and approves the procedures and the format for documenting them, noting any procedures that need to be added.
6. The full start-up procedures and the approval form may be provided to the OR for review and approval, depending on management protocol.

D. Sensor and Actuator Calibration.

1. All field-installed temperature, relative humidity, CO, CO_2 and pressure sensors and gages, and all actuators (dampers and valves) on all equipment shall be calibrated using the methods described below. Alternate methods may be used, if approved by the Owner before-hand. All test instruments shall have had a certified calibration within the last 12 months. Sensors installed *in* the unit at the factory with calibration certification provided need not be field calibrated.
2. All procedures used shall be fully documented on the prefunctional checklists or other suitable forms, clearly referencing the procedures followed and written documentation of initial, intermediate and final results.

3. Sensor Calibration Methods.

    a. All Sensors. Verify that all sensor locations are appropriate and away from causes of erratic operation. Verify that sensors with shielded cable are grounded only at one end. For sensor pairs that are used to determine a temperature or pressure difference, make sure they are reading within 1°F of each other for temperature and within a tolerance equal to 5% of the reading, of each other, for pressure. Tolerances for critical applications may be tighter.
    b. Sensors without Transmitters--Standard Application. Make a reading with a calibrated test instrument within 6 inches of the site sensor. Verify that the sensor reading (via the permanent thermostat, gage or building automation system (BAS)) is within the tolerances in the table below of the instrument-measured value. If not, install offset in BAS, calibrate or replace sensor.
    c. Critical Applications. For critical applications (process, manufacturing, etc.) more rigorous calibration techniques may be required for selected sensors. Describe any such methods used on an attached sheet.

Tolerances, Standard Applications

Sensor	Required Tolerance (+/-)	Sensor	Required Tolerance (+/-)
Cooling coil, chilled and condenser water temps	1.0F	Flow rates, water	10% of design
AHU wet bulb or dew point	2.0F	Relative humidity	10% of design
Hot water coil and boiler water temp	1.0F	Combustion flue temps	5.0F
Outside air, space air, duct air temps	0.4F	Oxygen or CO_2 monitor	5.0 % pts
Pressures, air, water	5%	CO monitor	2.0 % pts
Flow rates, air	10% of design	Averaging Sensors	3.0F

4. **Valve and Damper Stroke Setup and Check.**

   a. EMS Readout. For all valve and damper actuator positions checked, verify the actual position against the BAS readout.
   b. Set pumps or fans to normal operating mode. Command valve or damper closed, visually verify that valve or damper is closed and adjust output zero signal as required. Command valve or damper open, verify position is full open and adjust output signal as required. Command valve or damper to a few intermediate positions. If actual valve or damper position doesn't reasonably correspond, replace actuator.

5. **Closure for heating coil valves (NO):** Set heating setpoint 20°F above room temperature. Observe valve open. Remove control air or power from the valve and verify that the valve stem and actuator position do not change. Restore to normal. Set heating setpoint to 20°F below room temperature. Observe the valve close. Verify valve stem and actuator position does not change. Restore to normal.

6. **Closure for cooling coil valves (NC):** Set cooling setpoint 20°F above room temperature. Observe the valve close. Remove power from the valve and verify that the valve stem and actuator position do not change. Restore to normal. Set cooling setpoint to 20°F below room temperature. Observe valve open.

E. Execution of Prefunctional Checklists and Startup.

1. Four weeks prior to startup, the Subs and vendors schedule startup and checkout with the OR, GC and CxA. The performance of the prefunctional checklists, startup and checkout are directed and executed by the Sub or vendor. When checking off prefunctional checklists, signatures may be required of other Subs for verification of completion of their work.
2. The CxA shall observe, at minimum, the procedures for each piece of primary equipment, unless there are multiple units, (in which case a sampling strategy may be used as approved by the OR). In no case will the number of units witnessed be less than four on any one building, nor less than 20% of the total number of identical or very similar units.
3. For lower-level components of equipment, (e.g., VAV boxes, sensors, controllers), the CxA shall observe a sampling of the prefunctional and start-up procedures. The sampling procedures are identified in the commissioning plan.
4. The Subs and vendors shall execute startup and provide the CxA with a signed and dated copy of the completed start-up and prefunctional tests and checklists.

5. Only individuals that have direct knowledge and witnessed that a line item task on the prefunctional checklist was actually performed shall initial or check that item off. It is not acceptable for witnessing supervisors to fill out these forms.

F. Deficiencies, Non-Conformance and Approval in Checklists and Startup.

1. The Subs shall clearly list any outstanding items of the initial start-up and prefunctional procedures that were not completed successfully, at the bottom of the procedures form or on an attached sheet. The procedures form and any outstanding deficiencies are provided to the CxA within two days of test completion.
2. The CxA reviews the report and submits either a non-compliance report or an approval form to the Sub. The CxA shall work with the Subs and vendors to correct and retest deficiencies or uncompleted items. The CxA will involve the OR and others as necessary. The installing Subs or vendors shall correct all areas that are deficient or incomplete in the checklists and tests in a timely manner, and shall notify the CxA as soon as outstanding items have been corrected and resubmit an updated start-up report and a Statement of Correction on the original non-compliance report. When satisfactorily completed, the CxA recommends approval of the execution of the checklists and startup of each system to the OR using a standard form.
3. Items left incomplete, which later cause deficiencies or delays during functional testing may result in back charges to the responsible party. Refer to Part 3.7 herein for details.

3.5 PHASED COMMISSIONING

A. The project will not require startup and initial checkout to be executed in phases.

3.6 FUNCTIONAL PERFORMANCE TESTING

A. This sub-section applies to all commissioning functional testing for all divisions.

B. The general list of equipment to be commissioned is found in Section 019113, Part 1.15.

C. The parties responsible to execute each test are listed with each test in Sections ***220800, 230800, and 26080.***

D. **Objectives and Scope.** The objective of functional performance testing is to demonstrate that each system is operating according to the documented design intent and Contract Documents. Functional testing facilitates bringing the systems from a state of substantial completion to full dynamic operation. Additionally, during the testing process, areas of deficient performance are identified and corrected, improving the operation and functioning of the systems.

1. In general, each system should be operated through all modes of operation (seasonal, occupied, unoccupied, warm-up, cool-down, part- and full-load) where there is a specified system response. Verifying each sequence in the sequences of operation is required. Proper responses to such modes and conditions as power failure, freeze condition, low oil pressure, no flow, equipment failure, etc. shall also be tested. Specific modes required in this project are given in Sections ***220800, 230800, and 260800.***

2. Development of Test Procedures. Before test procedures are written, the CxA shall obtain all requested documentation and a current list of change orders affecting equipment or systems, including an updated points list, program code, control sequences

and parameters. Using the testing parameters and requirements in Sections ***220800, 230800, and 260800.***

3. The CxA shall develop specific test procedures and forms to verify and document proper operation of each piece of equipment and system. Each Sub or vendor responsible to execute a test, shall provide limited assistance to the CxA in developing the procedures review (answering questions about equipment, operation, sequences, etc.). Prior to execution, the CxA shall provide a copy of the test procedures to the Sub(s) who shall review the tests for feasibility, safety, equipment and warranty protection. The CxA may submit the tests to the A/E for review, if requested.

4. The CxA shall review owner-contracted, factory testing or required owner acceptance tests which the CxA is not responsible to oversee, including documentation format, and shall determine what further testing or format changes may be required to comply with the Specifications. Redundancy of testing shall be minimized.

5. The purpose of any given specific test is to verify and document compliance with the stated criteria of acceptance given on the test form.

6.

E. Test Methods.

1. Functional performance testing and verification may be achieved by manual testing (persons manipulate the equipment and observe performance) or by monitoring the performance and analyzing the results using the control system's trend log capabilities or by stand-alone dataloggers. Sections ***220800, 230800, and 260800*** specify which methods shall be used for each test. The CxA may substitute specified methods or require an additional method to be executed, other than what was specified, with the approval of the OR. This may require a change order and adjustment in charge to the Owner. The CxA will determine which method is most appropriate for tests that do not have a method specified.
2. Simulated Conditions. Simulating conditions (not by an overwritten value) shall be allowed, though timing the testing to experience actual conditions is encouraged wherever practical.
3. Overwritten Values. Overwriting sensor values to simulate a condition, such as overwriting the outside air temperature reading in a control system to be something other than it really is, shall be allowed, but shall be used with caution and avoided when possible. Such testing methods often can only test a part of a system, as the interactions and responses of other systems will be erroneous or not applicable. Simulating a condition is preferable. e.g., for the above case, by heating the outside air sensor with a hair blower rather than overwriting the value or by altering the appropriate setpoint to see the desired response. Before simulating conditions or overwriting values, sensors, transducers and devices shall have been calibrated.
4. Simulated Signals. Using a signal generator which creates a simulated signal to test and calibrate transducers and DDC constants is generally recommended over using the sensor to act as the signal generator via simulated conditions or overwritten values.
5. Altering Setpoints. Rather than overwriting sensor values, and when simulating conditions is difficult, altering setpoints to test a sequence is acceptable. For example, to see the AC compressor lockout work at an outside air temperature below 55F, when the outside air temperature is above 55F, temporarily change the lockout setpoint to be 2F above the current outside air temperature.
6. Indirect Indicators. Relying on indirect indicators for responses or performance shall be allowed only after visually and directly verifying and documenting, over the range of the

tested parameters, that the indirect readings through the control system represent actual conditions and responses. Much of this verification is completed during prefunctional testing.

7. Setup. Each function and test shall be performed under conditions that simulate actual conditions as close as is practically possible. The Sub executing the test shall provide all necessary materials, system modifications, etc. to produce the necessary flows, pressures, temperatures, etc. necessary to execute the test according to the specified conditions. At completion of the test, the Sub shall return all affected building equipment and systems, due to these temporary modifications, to their pre-test condition.
8. Sampling. Multiple identical pieces of non-life-safety or otherwise non-critical equipment may be functionally tested using a sampling strategy. Significant application differences and significant sequence of operation differences in otherwise identical equipment invalidates their common identity. A small size or capacity difference, alone, does not constitute a difference. The specific recommended sampling rates are specified with each type of equipment in Sections ***220800, 230800, and 260800.*** It is noted that no sampling by Subs is allowed in prefunctional checklist execution.

    a. A common sampling strategy referenced in the *Specifications* as the "xx% Sampling—yy% Failure Rule" is defined by the following example.

    xx = the percent of the group of identical equipment to be included in each sample.

    yy = the percent of the sample that if failing, will require another sample to be tested.

    b. The example below describes a 20% Sampling—10% Failure Rule.

        1) Randomly test at least 20% (xx) of each group of identical equipment. In no case test less than three units in each group. This 20%, or three, constitute the "first sample."
        2) If 10% (yy) of the units in the first sample fail the functional performance tests, test another 20% of the group (the second sample).
        3) If 10% of the units in the second sample fail, test all remaining units in the whole group.
        4) If at any point, frequent failures are occurring and testing is becoming more troubleshooting than verification, the CxA may stop the testing and require the responsible Sub to perform and document a checkout of the remaining units, prior to continuing with functionally testing the remaining units.

F. **Coordination and Scheduling.** The Subs shall provide sufficient notice to the CxA regarding their completion schedule for the prefunctional checklists and startup of all equipment and systems. The CxA will schedule functional tests through the OR, GC and affected Subs. The CxA shall direct, witness and document the functional testing of all equipment and systems. The Subs shall execute the tests.

1. In general, functional testing is conducted after prefunctional testing and startup has been satisfactorily completed. The control system is sufficiently tested and approved by the CxA before it is used for TAB or to verify performance of other components or systems. The air balancing and water balancing is completed and debugged before functional testing of air-related or water-related equipment or systems. Testing proceeds from components to subsystems to systems. When the proper performance of all interacting individual systems has been achieved, the interface or coordinated responses between systems is checked.

G. **Test Equipment.** Refer to Section 019113, Part 2 for test equipment requirements.

H. **Problem Solving.** The CxA will recommend solutions to problems found, however the burden of responsibility to solve, correct and retest problems is with the GC, Subs and A/E.

3.7 DOCUMENTATION, NON-CONFORMANCE AND APPROVAL OF TESTS

A. **Documentation.** The CxA shall witness and document the results of all functional performance tests using the specific procedural forms developed for that purpose. Prior to testing, these forms are provided to the OR for review and approval and to the Subs for review. The CxA will include the filled out forms in the O&M manuals.

B. Non-Conformance.

1. The CxA will record the results of the functional test on the procedure or test form. All deficiencies or non-conformance issues shall be noted and reported to the OR on a standard non-compliance form.
2. Corrections of minor deficiencies identified may be made during the tests at the discretion of the CxA. In such cases the deficiency and resolution will be documented on the procedure form.
3. Every effort will be made to expedite the testing process and minimize unnecessary delays, while not compromising the integrity of the procedures. However, the CxA will not be pressured into overlooking deficient work or loosening acceptance criteria to satisfy scheduling or cost issues, unless there is an overriding reason to do so at the request of the OR.
4. As tests progress and a deficiency is identified, the CxA discusses the issue with the executing contractor.

    a. When there is no dispute on the deficiency and the Sub accepts responsibility to correct it:
        1) The CxA documents the deficiency and the Sub's response and intentions and they go on to another test or sequence. After the day's work, the CxA submits the non-compliance reports to the OR for signature, if required. A copy is provided to the Sub and CxA. The Sub corrects the deficiency, signs the statement of correction at the bottom of the non-compliance form certifying that the equipment is ready to be retested and sends it back to the CxA.
        2) The CxA reschedules the test and the test is repeated.

    b. If there is a dispute about a deficiency, regarding whether it is a deficiency or who is responsible:

        1) The deficiency shall be documented on the non-compliance form with the Sub's response and a copy given to the OR and to the Sub representative assumed to be responsible.
        2) Resolutions are made at the lowest management level possible. Other parties are brought into the discussions as needed. Final interpretive authority is with the A/E. Final acceptance authority is with the Project Manager.
        3) The CxA documents the resolution process.
        4) Once the interpretation and resolution have been decided, the appropriate party corrects the deficiency, signs the statement of correction on the non-

compliance form and provides it to the CxA. The CxA reschedules the test and the test is repeated until satisfactory performance is achieved.

5. Cost of Retesting.

a. The cost for the *Sub* to retest a prefunctional or functional test, if they are responsible for the deficiency, shall be theirs. If they are not responsible, any cost recovery for retesting costs shall be negotiated with the GC.
b. For a deficiency identified, not related to any prefunctional checklist or start-up fault, the following shall apply: The CxA and OR will direct the retesting of the equipment once at no "charge" to the GC for their time. However, the CxA's time for a second retest will be charged to the GC, who may choose to recover costs from the responsible Sub.
c. The time for the CxA and OR to direct any retesting required because a specific *prefunctional* checklist or start-up test item, reported to have been successfully completed, but determined during functional testing to be faulty, will be backcharged to the GC, who may choose to recover costs from the party responsible for executing the faulty prefunctional test.
d. Refer to the sampling section of Section 019113, Part 3.6 for requirements for testing and retesting identical equipment.

6. The Contractor shall respond in writing to the CxA at least as often as commissioning meetings are being scheduled concerning the status of each apparent outstanding discrepancy identified during commissioning. Discussion shall cover explanations of any disagreements and proposals for their resolution.
7. The CxA retains the original non-conformance forms until the end of the project.
8. Any required retesting by any contractor shall not be considered a justified reason for a claim of delay or for a time extension by the prime contractor.

C. **Failure Due to Manufacturer Defect.** If 10%, or five, whichever is greater, of identical pieces (size alone does not constitute a difference) of equipment fail to perform to the Contract Documents (mechanically or substantively) due to manufacturing defect, not allowing it to meet its submitted performance spec, all identical units may be considered unacceptable by the OR. In such case, the Contractor shall provide the Owner with the following:

1. Within one week of notification from the OR, the Contractor or manufacturer's representative shall examine all other identical units making a record of the findings. The findings shall be provided to the OR within two weeks of the original notice.
2. Within two weeks of the original notification, the Contractor or manufacturer shall provide a signed and dated, written explanation of the problem, cause of failures, etc. and all proposed solutions which shall include full equipment submittals. The proposed solutions shall not significantly exceed the specification requirements of the original installation.
3. The OR will determine whether a replacement of all identical units or a repair is acceptable.
4. Two examples of the proposed solution will be installed by the Contractor and the OR will be allowed to test the installations for up to one week, upon which the OR will decide whether to accept the solution.
5. Upon acceptance, the Contractor and/or manufacturer shall replace or repair all identical items, at their expense and extend the warranty accordingly, if the original equipment warranty had begun. The replacement/repair work shall proceed with reasonable speed beginning within one week from when parts can be obtained.

D. **Approval.** The CxA notes each satisfactorily demonstrated function on the test form. Formal approval of the functional test is made later after review by the CxA and by the OR, if

necessary. The CxA recommends acceptance of each test to the OR using a standard form. The OR gives final approval on each test using the same form, providing a signed copy to the CxA and the Contractor.

3.8 DEFERRED TESTING

A. **Unforeseen Deferred Tests.** If any check or test cannot be completed due to the building structure, required occupancy condition or other deficiency, execution of checklists and functional testing may be delayed upon approval of the OR. These tests will be conducted in the same manner as the seasonal tests as soon as possible. Services of necessary parties will be negotiated.

B. **Seasonal Testing.** During the warranty period, seasonal testing (tests delayed until weather conditions are closer to the system's design) shall be completed as part of this contract. The CxA shall coordinate this activity. Tests will be executed, documented and deficiencies corrected by the appropriate Subs, with facilities staff and the CxA witnessing. Any final adjustments to the O&M manuals and as-builds due to the testing will be made.

3.9 TRAINING OF OWNER PERSONNEL

A. The GC shall be responsible for training coordination and scheduling and ultimately for ensuring that training is completed.

B. The CxA shall be responsible for overseeing and approving the content and adequacy of the training of Owner personnel for commissioned equipment.

1. The CxA shall interview the facility manager and lead engineer to determine the special needs and areas where training will be most valuable. The Owner and CxA shall decide how rigorous the training should be for each piece of commissioned equipment. The CxA shall communicate the results to the Subs and vendors who have training responsibilities.
   In addition to these general requirements, the specific training requirements of Owner personnel by Subs and vendors are specified in Division ***22, 23, and 26***.

2. Each Sub and vendor responsible for training will submit a written training plan to the CxA for review and approval prior to training. The plan will cover the following elements:
   a. Equipment (included in training)
   b. Intended audience
   c. Location of training
   d. Objectives
   e. Subjects covered (description, duration of discussion, special methods, etc.)
   f. Duration of training on each subject
   g. Instructor for each subject
   h. Methods (classroom lecture, video, site walk-through, actual operational demonstrations, written handouts, etc.)
   i. Instructor and qualifications
   j. For the primary HVAC equipment, the Controls Contractor shall provide a short discussion of the control of the equipment during the mechanical or electrical training conducted by others.

3. The CxA develops an overall training plan and coordinates and schedules, with the OR and GC, the overall training for the commissioned systems. The CxA develops criteria for determining that the training was satisfactorily completed, including attending some of

the training, etc. The CxA recommends approval of the training to the OR using a standard form. The OR also signs the approval form at one of the training sessions, the CxA presents a one hour presentation discussing the use of the blank functional test forms for re-commissioning equipment. Video recording of the training sessions will be provided by the Trade Contractor with media cataloged by the CxA and added to the O&M manuals.

4. The mechanical design engineer shall at the first training session present the overall system design concept and the design concept of each equipment section. This presentation shall be one to two hours in length and include a review of all systems using the simplified system schematics (one-line drawings) including chilled water systems, condenser water, heating systems, gas supply systems, supply air systems, exhaust system and outside air strategies.

3.10 OPERATION AND MAINTENANCE MANUALS

A. Standard O&M Manuals.

1. The specific content and format requirements for the standard O&M manuals are detailed in Section ***017000***.

2. Contractor shall submit two draft copies of the complete operating and maintenance manual to the OR for review by the architect/engineer and CxA within 60 calendar days after review of equipment shop drawings. One copy will be returned to the contractor within 30 days after receipt by the A/E.

3. Contractor shall submit corrected final approved manuals prior to substantial completion. Prior to final submittal, the CxA shall review the O&M manuals (in addition to the initial draft O&M manual), and documentation, with redline as-builts, for systems that were commissioned to verify compliance with the specifications. The CxA will communicate, through the OR, deficiencies in the manuals to the contractor or A/E, as requested. Upon a successful review of the corrections, the CxA will recommend approval and acceptance of these sections of the O&M manuals to the OR. The CxA will also review each equipment warranty and verify that all requirements to keep the warranty valid are clearly stated. This work does not supersede the A/E's review of the O&M manuals according to the A/E's contract.

4. A/E Contribution. The A/E will include in the beginning of the O&M manuals a separate section describing the systems including:
   a. The design intent narrative prepared by the A/E and provided as part of the bid documents, updated to as-built status by the A/E.
   b. Simplified professionally drawn single line system diagrams on 8 ½" x 11" or 11" x 17" sheets. These shall include chillers, water system, condenser water system, heating system, supply air systems, exhaust systems and electrical distribution system. These shall show major pieces of equipment such as pumps, chillers, boilers, control valves, expansion tanks, coils, service valves, switchboards, motor control centers, panel boards, etc.

5. CxA Review and Approval. Prior to substantial completion, the CxA shall review the O&M manuals, documentation and redline as-builds *for systems that were commissioned* to verify compliance with the *Specifications.* The CxA will communicate deficiencies in the manuals to the OR or A/E, as requested. Upon a successful review of the corrections, the CxA recommends approval and acceptance of these sections of the

O&M manuals to the OR or A/E. The CxA also reviews each equipment warranty and verifies that all requirements to keep the warranty valid are clearly stated. This work does not supersede the A/E's review of the O&M manuals according to the A/E's contract.

B. Commissioning Record in O&M Manuals.

1. The CxA is responsible to compile, organize and index the following commissioning data by equipment into hyperlinked PDF and deliver it to the GC, to be included with the O&M manuals. Digital Hyperlinked PDF will be submitted. Hard copy upon request.

   The format of the manuals shall be:

   Tab I-1 Commissioning Plan
   Tab I-2 Final Commissioning Report (see (B.2) below)
   Tab 01 System Type 1 (chiller system, packaged unit, boiler system, etc.)
   Sub-Tab A Design narrative and criteria, sequences, approvals for Equipment 1
   Sub-Tab B Startup plan and report, approvals, corrections, blank prefunctional checklists
   Colored Separator Sheets—for each equipment type (fans, pumps, chiller, etc.)
   Sub-Tab C Functional tests (completed), trending and analysis, approvals and corrections, training plan, record and approvals, blank functional test forms and a recommended recommissioning schedule.
   Tab 02 System Type 2.....repeat as per System 1

2. Final Report Details. The final commissioning report shall include an executive summary, list of participants and roles, brief building description, overview of commissioning and testing scope and a general description of testing and verification methods. For each piece of commissioned equipment, the report should contain the disposition of the commissioning authority regarding the adequacy of the equipment, documentation and training meeting the contract documents in the following areas: 1) Equipment meeting the equipment specifications, 2) Equipment installation, 3) Functional performance and efficiency, 4) Equipment documentation and design intent, and 5) Operator training. All outstanding non-compliance items shall be specifically listed. Recommendations for improvement to equipment or operations, future actions, commissioning process changes, etc. shall also be listed. Each non-compliance issue shall be referenced to the specific functional test, inspection, trend log, etc. where the deficiency is documented. The functional performance and efficiency section for each piece of equipment shall include a brief description of the verification method used (manual testing, BAS trend logs, data loggers, etc.) and include observations and conclusions from the testing.

3. Other documentation will be retained by the CxA

3.11 WRITTEN WORK PRODUCTS

A. The commissioning process generates a number of written work products described in various parts of the *Specifications.* The *Commissioning Plan—Construction Phase,* lists all the formal written work products, describes briefly their contents, who is responsible to create them, their due dates, who receives and approves them and the location of the specification to create them. In summary, the written products are:

Product		Developed By
1.	Final commissioning plan	CxA
2.	Cx meeting minutes	CxA
3.	Commissioning schedules	CxA with GC
4.	Equipment documentation submittals	Subs
5.	Sequence clarifications	Subs and A/E as needed
5.	Prefunctional checklists	CxA
6.	Startup and initial checkout plan	Subs and CxA (compilation of existing documents)
7.	Startup and initial checkout forms filled out	Subs
8.	Final TAB report	TAB
9.	Issues log (deficiencies)	CxA
10.	Commissioning Progress Record	CxA
11.	Deficiency reports	CxA
12.	Functional test forms	CxA
13.	Filled out functional tests	CxA
14.	O&M manuals	Subs
15.	Commissioning record book	CxA
16.	Overall training plan	CxA and OR
17.	Specific training agendas	Subs
18.	Final commissioning report	CxA
19.	Misc. approvals	CxA

END OF SECTION 01 91 13

SECTION 22 08 00 - COMMISSIONING OF PLUMBING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

B. The OPR and BOD documentation are included by reference for information only.

1.2 SUMMARY

A. This section includes commissioning process requirements for Plumbing systems, assemblies, and equipment.

B. Related Sections:

1. Division 01 Section "General Commissioning Requirements" for general commissioning process requirements.

1.3 DESCRIPTION

A. Refer to Division 01 Section “General Commissioning Requirements” for the description of commissioning.

1.4 DEFINITIONS

A. Refer to Division 01 Section “General Commissioning Requirements” for definitions.

1.5 SUBMITTALS

A. Refer to Division 01 Section “General Commissioning Requirements” for CxA’s role.

B. Refer to Division 01 Section “Submittals” for specific requirements. In addition, provide the following:

C. Certificates of readiness

D. Certificates of completion of installation, prestart, and startup activities.

E. O&M manuals

F. Test reports

1.6 QUALITY ASSURANCE

A. Test Equipment Calibration Requirements: Contractors will comply with test manufacturer's calibration procedures and intervals. Recalibrate test instruments immediately after instruments have been repaired resulting from being dropped or damaged. Affix calibration tags to test instruments. Furnish calibration records to CxA upon request.

1.7 COORDINATION

A. Refer to Division 01 Section "General Commissioning Requirements" for requirements pertaining to coordination during the commissioning process.

PART 2 - PRODUCTS

2.1 TEST EQUIPMENT

A. All standard testing equipment required to perform startup, initial checkout and functional performance testing shall be provided by the contractor for the equipment being tested. For example, the plumbing contractor of Division 22 shall ultimately be responsible for all standard testing equipment for the plumbing system in Division 22.

B. Special equipment, tools and instruments (specific to a piece of equipment and only available from vendor) required for testing shall be included in the base bid price to the Owner and left on site, except for stand-alone data logging equipment that may be used by the CxA.

C. Proprietary test equipment and software required by any equipment manufacturer for programming and/or start-up, whether specified or not, shall be provided by the manufacturer of the equipment. Manufacturer shall provide the test equipment, demonstrate its use, and assist in the commissioning process as needed. Proprietary test equipment (and software) shall become the property of the Owner upon completion of the commissioning process.

D. Data logging equipment and software required to test equipment will be provided by the CxA, but shall not become the property of the Owner.

E. All testing equipment shall be of sufficient quality and accuracy to test and/or measure system performance with the tolerances specified in the Specifications. If not otherwise noted, the following minimum requirements apply: Temperature sensors and digital thermometers shall have a certified calibration within the past year to an accuracy of 0.5°F and a resolution of + or - 0.1°F. Pressure sensors shall have an accuracy of + or - 2.0% of the value range being measured (not full range of meter) and have been calibrated within the last year.

PART 3 - EXECUTION

3.1 GENERAL DOCUMENTATION REQUIREMENTS

A. With assistance from the installing contractors, the CxA will prepare Pre-Functional Checklists for all commissioned components, equipment, and systems

B. **Red-lined Drawings:**
1. The contractor will verify all equipment, systems, instrumentation, wiring and components are shown correctly on red-lined drawings.
2. Preliminary red-lined drawings must be made available to the Commissioning Team for use prior to the start of Functional Performance Testing.
3. Changes, as a result of Functional Testing, must be incorporated into the final as-built drawings, which will be created from the red-lined drawings.
4. The contracted party, as defined in the Contract Documents will create the as-built drawings.

C. **Operation and Maintenance Data:**
1. Contractor will provide a copy of O&M literature within 45 days of each submittal acceptance for use during the commissioning process for all commissioned equipment and systems.
2. The CxA will review the O&M literature once for conformance to project requirements.
3. The CxA will receive a copy of the final approved O&M literature once corrections have been mad by the contractor.

D. **Demonstration and Training:**
1. Contractor will provide demonstration and training as required by the specifications.
2. A complete training plan and schedule must be submitted by the contractor to the CxA four weeks (4) prior to any training.
3. A training agenda for each training session must be submitted to the CxA one (1) week prior the training session.
4. The CxA shall be notified at least 72 hours in advance of scheduled tests so that testing may be observed by the CxA and Owner's representative. A copy of the test record shall be provided to the CxA, Owner, and Architect.
5. Engage a Factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain specific equipment.
6. Train Owner's maintenance personnel on procedures and schedules for starting and stopping, trouble shooting, servicing, and maintaining equipment.
7. Review data in O&M Manuals.

E. **Systems manual requirements:**
1. The Systems Manual is intended to be a usable information resource containing all of the information related to the systems, assemblies, and Commissioning Process in one place with indexes and cross references.

2. The GC shall include final approved versions of the following information for the Systems Manual:
    a. As-Built System Schematics
    b. Verified Record Drawings
    c. Test Results (not otherwise included in Cx Record)
    d. Periodic Maintenance Information
    e. Recommendations for recalibration frequency of sensors and actuators
    f. A list of contractors, subcontractors, suppliers, architects, and engineers involved in the project along with their contact information
    g. Training Records, Information on training provided, attendees list, and any on-going training
3. This information shall be organized and arranged by building system, such as piping, chilled water make up, heating hot water heaters, etc.
4. Information should be provided in an electronic version to the extent possible. Legible, scanned images are acceptable for non-electronic documentation to facilitate this deliverable.

3.2 CONTRACTOR'S RESPONSIBILITIES

A. Perform commissioning tests at the direction of the CxA.

B. Attend commissioning coordination meetings.

C. Attend domestic water balancing review and coordination meetings.

D. Participate in Plumbing systems, assemblies, equipment, and component maintenance orientation and inspection as directed by the CxA.

E. Provide information requested by the CxA for final commissioning documentation.

F. Include requirements for submittal data, operation and maintenance data, and training in each purchase order or sub-contract written.

G. Prepare preliminary schedule for Plumbing system orientations and inspections, operation and maintenance manual submissions, training sessions, pipe system testing, flushing and cleaning, and equipment start-up. Distribute preliminary schedule to commissioning team members.

H. Update schedule as required throughout the construction period.

I. During the startup and initial checkout process, execute the related portions of the prefunctional checklists for all commissioned equipment.

J. Assist the CxA in all verification and functional performance tests.

K. Provide measuring instruments and logging devices to record test data, and provide data acquisition equipment to record data for the complete range of testing for the required test period.

L. Gather operation and maintenance literature on all equipment, and assemble as required by the specifications. Submit to CxA (45) days after submittal acceptance.

M. Coordinate with the CxA to provide (48) hour advance notice so that the witnessing of equipment and system start-up and testing can begin.

N. Notify the CxA a minimum of (2) weeks in advance of the time for start of the balancing work.

O. Participate in, and schedule vendors and contractors to participate in the training sessions.

P. Provide written notification to the GC and CxA that the following work has been completed in accordance with the contract documents, and that the equipment, systems, and sub-system are operating as required.
   1. Plumbing equipment including domestic water heaters, pumps, and domestic water piping and sump pumps.

Q. The equipment supplier shall document the performance of his equipment.

R. Provide a complete set of red-lined drawings to the CxA prior to the start of Functional Performance Testing.

S. Provide training of the Owner's operating staff using expert qualified personnel, as specified.

T. Equipment Suppliers
   1. Provide all requested submittal data, including detailed start-up procedures and specific responsibilities of the Owner, to keep warranties in force.
   2. Assist in equipment testing per agreements with contractors.
   3. Provide information requested by CxA regarding equipment sequence of operation and testing procedures.

U. Refer to Division 01 Section "General Commissioning Requirements" for additional contractor responsibilities.

3.3 OWNER'S RESPONSIBILITIES

A. Refer to Division 01 Section "General Commissioning Requirements" for Owner's Responsibilities.

3.4 DESIGN PROFESSIONAL'S RESPONSIBILITIES

A. Refer to Division 01 Section "General Commissioning Requirements" for Design Professional's Responsibilities.

3.5 CxA'S RESPONSIBILITIES

A. Refer to Division 01 Section "General Commissioning Requirements" for CxA's Responsibilities.

3.6 TESTING PREPARATION

A. Certify in writing to the CxA that Plumbing systems, subsystems, and equipment have been installed, calibrated, and started and are operating according to the Contract Documents.

B. Certify in writing to the CxA that Plumbing instrumentation and control systems have been completed and calibrated, that they are operating according to the Contract Documents, and that pretest set points have been recorded.

C. Inspect and verify the position of each device and interlock identified on checklists.

D. Check safety cutouts and alarms during normal mode of operation.

E. Testing Instrumentation: Install measuring instruments and logging devices to record test data as directed by the CxA.

3.7 GENERAL TESTING REQUIREMENTS

A. Provide technicians, instrumentation, and tools to perform commissioning test at the direction of the CxA.

B. Scope of Plumbing testing shall include entire Plumbing installation. Testing shall include measuring capacities and effectiveness of operational and control functions.

C. The CxA along with the Plumbing contractor shall prepare detailed testing plans, procedures, and checklists for Plumbing systems, subsystems, and equipment.

D. Tests will be performed using design conditions whenever possible.

E. Simulated conditions may need to be imposed using an artificial load when it is not practical to test under design conditions. Before simulating conditions, calibrate testing instruments. Provide equipment to simulate loads. Set simulated conditions as directed by the CxA and document simulated conditions and methods of simulation. After tests, return settings to normal operating conditions.

F. The CxA may direct that set points be altered when simulating conditions is not practical.

G. If tests cannot be completed because of a deficiency outside the scope of the Plumbing system, document the deficiency and report it to the Owner. After deficiencies are resolved, reschedule tests.

3.8 PLUMBING SYSTEMS, SUBSYSTEMS, AND EQUIPMENT TESTING PROCEDURES

A. **Equipment Testing and Acceptance Procedures:** Testing requirements are specified in individual Division 22 sections. Provide submittals, test data, inspector record, and certifications to the CxA.

B. The work included in the commissioning process involves a complete and thorough evaluation of the operation and performance of all components, systems and sub-systems. The following equipment and systems shall be evaluated:

1. ***Domestic Hot Water System***
2. ***Domestic Water Heater***
3. ***Hot Water Circulating Pump***

DEFICIENCIES/NON-CONFORMANCE, COST OF RETESTING, FAILURE DUE TO MANUFACTURER DEFECT

C. Refer to Division 01 Section “General Commissioning Requirements” for requirements pertaining to deficiencies/non-conformance, cost of retesting, or failure due to manufacturer defect.

3.9 APPROVAL

A. Refer to Division 01 Section “General Commissioning Requirements” for approval procedures.

3.10 DEFERRED TESTING

A. Refer to Division 01 Section “General Commissioning Requirements” for requirements pertaining to deferred testing.

3.11 OPERATION AND MAINTENANCE MANUALS

A. The Operation and Maintenance Manuals shall conform to Contract Documents requirements as stated in Division 01.

B. Refer to Division 01 Section “General Commissioning Requirements” for the AE and CxA roles in the Operation and Maintenance Manual contribution, review and approval process.

3.12 TRAINING OF OWNER PERSONNEL

A. Refer to Division 01 Section “General Commissioning Requirements” for requirements pertaining to training.

B. **Plumbing Contractor.** The mechanical contractor shall have the following training responsibilities:

1. Provide the CxA with a training plan two weeks before the planned training.
2. Provide designated Owner personnel with comprehensive orientation and training in the understanding of the systems and the operation and maintenance of each piece of Plumbing equipment.
3. During any demonstration, should the system fail to perform in accordance with the requirements of the O&M manual or sequence of operations, the system will be repaired or adjusted as necessary and the demonstration repeated.
4. The appropriate trade or manufacturer's representative shall provide the instructions on each major piece of equipment. This person may be the start-up technician for the piece of equipment, the installing contractor or manufacturer’s representative. Practical building operating expertise as well as in-depth knowledge of all modes of operation of the specific piece of equipment is required. More than one party may be required to execute the training.

5. The training sessions shall follow the outline in the Table of Contents of the operation and maintenance manual and illustrate whenever possible the use of the O&M manuals for reference.
6. Hands-on training shall include start-up, operation in all modes possible, including manual, shut-down and any emergency procedures and preventative maintenance for all pieces of equipment.
7. The plumbing contractor shall fully explain and demonstrate the operation, function and overrides of any local packaged controls.
8. Training shall occur after functional testing is complete, unless approved otherwise by the Owner.

END OF SECTION 22 08 00

SECTION 23 08 00 - COMMISSIONING OF HVAC SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

B. The OPR and BOD documentation are included by reference for information only.

1.2 SUMMARY

A. This section includes commissioning process requirements for HVAC&R systems, assemblies, and equipment.

B. Related Sections:

1. Division 01 Section "General Commissioning Requirements" for general commissioning process requirements.

1.3 DESCRIPTION

A. Refer to Division 01 Section “General Commissioning Requirements” for the description of commissioning.

1.4 DEFINITIONS

A. Refer to Division 01 Section “General Commissioning Requirements” for definitions.

1.5 SUBMITTALS

A. Refer to Division 01 Section “General Commissioning Requirements” for CxA’s role.

B. Refer to Division 01 Section “Submittals” for specific requirements.

C. In addition, provide the following:
1. Certificates of readiness
2. Certificates of completion of installation, prestart, and startup activities.
3. O&M manuals
4. Test reports

D. Control Drawings Submittal
1. The control drawings shall have a key to all abbreviations.
2. The control drawings shall contain graphic schematic depictions of the systems and each component.

3. The schematics will include the system and component layout of any equipment that the control system monitors, enables or controls, even if the equipment is primarily controlled by packaged or integral controls.
4. Provide a full list of trended and alarm points with alarm thresholds documented.
5. Provide a full points list with at least the following included for each point:
    a. Controlled system
    b. Point abbreviation
    c. Point description
    d. Display unit
    e. Control point or set point (Yes / No)
    f. Monitoring point (Yes / No)
    g. Intermediate point (Yes / No)
    h. Calculated point (Yes / No)

1.6 QUALITY ASSURANCE

A. Test Equipment Calibration Requirements: Contractors will comply with test manufacturer's calibration procedures and intervals. Recalibrate test instruments immediately after instruments have been repaired resulting from being dropped or damaged. Affix calibration tags to test instruments. Furnish calibration records to CxA upon request.

1.7 COORDINATION

A. Refer to Division 01 Section "General Commissioning Requirements" for requirements pertaining to coordination during the commissioning process.

PART 2 - PRODUCTS

2.1 TEST EQUIPMENT

A. All standard testing equipment required to perform startup, initial checkout and functional performance testing shall be provided by the Contractor for the equipment being tested. For example, the mechanical contractor of Division 23 shall ultimately be responsible for all standard testing equipment for the HVAC&R system and controls system in Division 23, except for equipment specific to and used by TAB in their commissioning responsibilities. A sufficient quantity of two-way radios shall be provided by each subcontractor.

B. Special equipment, tools and instruments (specific to a piece of equipment and only available from vendor) required for testing shall be included in the base bid price to the Owner and left on site, except for stand-alone data logging equipment that may be used by the CxA.

C. Proprietary test equipment and software required by any equipment manufacturer for programming and/or start-up, whether specified or not, shall be provided by the manufacturer of the equipment. Manufacturer shall provide the test equipment, demonstrate its use, and assist in the commissioning process as needed. Proprietary test equipment (and software) shall become the property of the Owner upon completion of the commissioning process.

D. Data logging equipment and software required to test equipment will be provided by the CxA, but shall not become the property of the Owner.

E. All testing equipment shall be of sufficient quality and accuracy to test and/or measure system performance with the tolerances specified in the Specifications. If not otherwise noted, the following minimum requirements apply: Temperature sensors and digital thermometers shall have a certified calibration within the past year to an accuracy of 0.5°F and a resolution of + or - 0.1°F. Pressure sensors shall have an accuracy of + or - 2.0% of the value range being measured (not full range of meter) and have been calibrated within the last year.

PART 3 - EXECUTION

3.1 GENERAL DOCUMENTATION REQUIREMENTS

A. With assistance from the installing contractors, the CxA will prepare Pre-Functional Checklists for all commissioned components, equipment, and systems

B. **Red-lined Drawings:**
1. The contractor will verify all equipment, systems, instrumentation, wiring and components are shown correctly on red-lined drawings.
2. Preliminary red-lined drawings must be made available to the Commissioning Team for use prior to the start of Functional Performance Testing.
3. Changes, as a result of Functional Testing, must be incorporated into the final as-built drawings, which will be created from the red-lined drawings.
4. The contracted party, as defined in the Contract Documents will create the as-built drawings.

C. **Operation and Maintenance Data:**
1. Contractor will provide a digital copy of O&M literature within 45 days of each submittal acceptance for use during the commissioning process for all commissioned equipment and systems.
2. The CxA will review the O&M literature once for conformance to project requirements.
3. The CxA will receive a copy of the final approved O&M literature once corrections have been mad by the Contractor.

D. **Demonstration and Training:**
1. Contractor will provide demonstration and training as required by the specifications.
2. A complete training plan and schedule must be submitted by the contractor to the CxA four weeks (4) prior to any training.
3. A training agenda for each training session must be submitted to the CxA one (1) week prior the training session.
4. The CxA shall be notified at least 72 hours in advance of scheduled tests so that testing may be observed by the CxA and Owner's representative. A copy of the test record shall be provided to the CxA, Owner, and Architect.
5. Engage a Factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain specific equipment.
6. Train Owner's maintenance personnel on procedures and schedules for starting and stopping, trouble shooting, servicing, and maintaining equipment.

7. Review data in O&M Manuals.

E. **Systems manual requirements:**

1. The Systems Manual is intended to be a usable information resource containing all of the information related to the systems, assemblies, and Commissioning Process in one place with indexes and cross references.
2. The GC shall include final approved versions of the following information for the Systems Manual:
    a. As-Built System Schematics
    b. Verified Record Drawings
    c. Test Results (not otherwise included in Cx Record)
    d. Periodic Maintenance Information for computer maintenance management system
    e. Recommendations for recalibration frequency of sensors and actuators
    f. A list of contractors, subcontractors, suppliers, architects, and engineers involved in the project along with their contact information
    g. Training Records, Information on training provided, attendees list, and any on-going training
3. This information shall be organized and arranged by building system, such as fire alarm, chilled water, heating hot water, etc.
4. Information should be provided in an electronic version to the extent possible. Legible, scanned images are acceptable for non-electronic documentation to facilitate this deliverable.

3.2 CONTRACTOR'S RESPONSIBILITIES

A. Mechanical, Controls and TAB Contractors. The commissioning responsibilities applicable to each of the mechanical, controls and TAB contractors of Division 23 are as follows (all references apply to commissioned equipment only):

B. Perform commissioning tests at the direction of the CxA.

C. Attend commissioning coordination meetings per Division 01 Section “General Commissioning Requirements”.

D. Attend testing, adjusting, and balancing review and coordination meetings.

E. Participate in HVAC&R systems, assemblies, equipment, and component maintenance orientation and inspection as directed by the CxA.

F. Provide information requested by the CxA for final commissioning documentation.

G. Include requirements for submittal data, operation and maintenance data, and training in each purchase order or sub-contract written.

H. Prepare preliminary schedule for Mechanical system orientations and inspections, operation and maintenance manual submissions, training sessions, pipe and duct system testing, flushing and cleaning, equipment start-up, testing and balancing and task completion for owner. Distribute preliminary schedule to commissioning team members.

I. Update schedule as required throughout the construction period.

J. During the startup and initial checkout process, execute the related portions of the prefunctional checklists for all commissioned equipment.

K. Assist the CxA in all verification and functional performance tests.

L. Provide measuring instruments and logging devices to record test data, and provide data acquisition equipment to record data for the complete range of testing for the required test period.

M. Gather operation and maintenance literature on all equipment, and assemble as required by the specifications. Submit to CxA (45) days after submittal acceptance.

N. Coordinate with the CxA to provide (48) hour advance notice so that the witnessing of equipment and system start-up and testing can begin.

O. Notify the CxA a minimum of (2) weeks in advance of the time for start of the testing and balancing work. Attend the initial testing and balancing meeting for review of the official testing and balancing procedures.

P. Participate in, and schedule vendors and contractors to participate in the training sessions.

Q. Provide written notification to the CM/GC and CxA Authority that the following work has been completed in accordance with the contract documents, and that the equipment, systems, and sub-system are operating as required.
1. HVAC&R equipment including all fans, air handling units, ductwork, dampers, terminals, and all other equipment furnished under this Division.
2. Building automation system.
3. Test and balance.

R. The equipment supplier shall document the performance of his equipment.

S. Provide a complete set of red-lined drawings to the CxA prior to the start of Functional Performance Testing.

T. Test, Adjust and Balance Contractor
1. Attend initial commissioning coordination meeting scheduled by the Commissioning Authority.
2. Submit the site specific testing and balancing plan to the CxA and AE for review and acceptance.
3. Attend the testing and balancing review meeting scheduled by the CxA. Be prepared to discuss the procedures that shall be followed in testing, adjusting, and balancing the HVAC&R system.
4. At the completion of the testing and balancing work, and the submittal of the final testing and balancing report, notify the HVAC&R contractor and the CM/GC.
5. At the completion of testing and balancing work, and the submittal of the final testing and balancing report, notify the HVAC&R Contractor and the CM/GC.
6. Participate in verification of the testing and balancing report, which will consist of repeating measurements contained in the testing and balancing reports. Assist in diagnostic purposes when directed.

U. Provide training of the Owner’s operating staff using expert qualified personnel, as specified.

V. Equipment Suppliers

1. Provide all requested submittal data, including detailed start-up procedures and specific responsibilities of the Owner, to keep warranties in force.
2. Assist in equipment testing per agreements with contractors.
3. Provide information requested by CxA regarding equipment sequence of operation and testing procedures.

W. Refer to Division 01 Section “General Commissioning Requirements” for additional contractor responsibilities.

3.3 OWNER’S RESPONSIBILITIES

A. Refer to Division 01 Section “General Commissioning Requirements” for Owner’s Responsibilities.

3.4 DESIGN PROFESSIONAL'S RESPONSIBILITIES

A. Refer to Division 01 Section “General Commissioning Requirements” for Design Professional’s Responsibilities.

3.5 CxA'S RESPONSIBILITIES

A. Refer to Division 01 Section “General Commissioning Requirements” for CxA’s Responsibilities.

3.6 TESTING PREPARATION

A. Certify in writing to the CxA that HVAC&R systems, subsystems, and equipment have been installed, calibrated, and started and are operating according to the Contract Documents.

B. Certify in writing to the CxA that HVAC&R instrumentation and control systems have been completed and calibrated, that they are operating according to the Contract Documents, and that pretest set points have been recorded. Submit point to point verification sheets.

C. Certify in writing that testing, adjusting, and balancing procedures have been completed and that testing, adjusting, and balancing reports have been submitted, discrepancies corrected, and corrective work approved. Supply preliminary TAB reports as required

D. Place systems, subsystems, and equipment into operating mode to be tested (e.g., normal shutdown, normal auto position, normal manual position, unoccupied cycle, emergency power, and alarm conditions).

E. Inspect and verify the position of each device and interlock identified on checklists.

F. Check safety cutouts, alarms, and interlocks with smoke control and life-safety systems during each mode of operation.

G. Testing Instrumentation: Install measuring instruments and logging devices to record test data as directed by the CxA.

3.7 TESTING, ADJUSTING AND BALANCING VERIFICATION

A. Prior to performance of Testing, Adjusting and Balancing work, provide copies of reports, sample forms, checklists, TAB plan, and certificates to the CxA.

B. Notify the CxA at least ten (10) days in advance of testing and balancing Work, and provide access for the CxA to witness testing and balancing Work.

C. Provide technicians, instrumentation, and tools to verify testing and balancing of HVAC&R systems at the direction of the CxA.

1. The CxA will notify testing and balancing subcontractor ten (10) days in advance of the date of field verification. Notice will not include data points to be verified.
2. The testing and balancing subcontractor shall use the same instruments (by model and serial number) that were used when original data were collected.
3. Failure of an item includes, other than sound, a deviation of more than 10 percent. Failure of more than 10 percent of selected items shall result in rejection of final testing, adjusting, and balancing report. For sound pressure readings, a deviation of 3 dB shall result in rejection of final testing. Variations in background noise must be considered.
4. Remedy the deficiency and notify the CxA so verification of failed portions can be performed.

3.8 GENERAL TESTING REQUIREMENTS

A. Provide technicians, instrumentation, and tools to perform commissioning test at the direction of the CxA.

B. Scope of HVAC&R testing shall include entire HVAC&R installation, from central equipment for heat generation and refrigeration through distribution systems to each conditioned space. Testing shall include measuring capacities and effectiveness of operational and control functions.

C. Test all operating modes, interlocks, control responses, and responses to abnormal or emergency conditions, and verify proper response of building automation system controllers and sensors.

D. The CxA along with the HVAC&R contractor, testing and balancing Subcontractor, and HVAC&R Instrumentation and Control Subcontractor shall prepare detailed testing plans, procedures, and checklists for HVAC&R systems, subsystems, and equipment.

E. Tests will be performed using design conditions whenever possible.

F. Simulated conditions may need to be imposed using an artificial load when it is not practical to test under design conditions. Before simulating conditions, calibrate testing instruments. Provide equipment to simulate loads. Set simulated conditions as directed by the CxA and document simulated conditions and methods of simulation. After tests, return settings to normal operating conditions.

G. The CxA may direct that set points be altered when simulating conditions is not practical.

H. The CxA may direct that sensor values be altered with a signal generator when design or simulating conditions and altering set points are not practical.

I. If tests cannot be completed because of a deficiency outside the scope of the HVAC&R system, document the deficiency and report it to the Owner. After deficiencies are resolved, reschedule tests.

J. If the testing plan indicates specific seasonal testing, complete appropriate initial performance tests and documentation and schedule seasonal tests.

3.9 HVAC&R SYSTEMS, SUBSYSTEMS, AND EQUIPMENT TESTING PROCEDURES

A. **Equipment Testing and Acceptance Procedures**: Testing requirements are specified in individual Division 23 sections. Provide submittals, test data, inspector record, and certifications to the CxA.

B. **HVAC&R Instrumentation and Control System Testing:** Assist the CxA with preparation of testing plans.

C. **Pipe system cleaning, flushing, hydrostatic tests, and chemical treatment:** Test requirements are specified in Division 23 piping Sections. HVAC&R Contractor shall prepare a pipe system cleaning, flushing, and hydrostatic testing plan. Provide cleaning, flushing, testing, and treating plan and final reports to the CxA. Plan shall include the following:

1. Sequence of testing and testing procedures for each section of pipe to be tested, identified by pipe zone or sector identification marker. Markers shall be keyed to Drawings for each pipe sector, showing the physical location of each designated pipe test section. Drawings keyed to pipe zones or sectors shall be formatted to allow each section of piping to be physically located and identified when referred to in pipe system cleaning, flushing, hydrostatic testing, and chemical treatment plan.
2. Description of equipment for flushing operations.
3. Minimum flushing water velocity.
4. Tracking checklist for managing and ensuring that all pipe sections have been cleaned, flushed, hydrostatically tested, and chemically treated.

D. **Refrigeration System Testing:** Provide technicians, instrumentation, tools, and equipment to test. The CxA shall determine the sequence of testing and testing procedures for each equipment item and pipe section to be tested. Complete piping testing forms supplied by commissioning provider.

E. **HVAC&R Distribution System Testing**: Provide technicians, instrumentation, tools, and equipment to test performance of air, and hydronic distribution systems; special exhaust; and other distribution systems, including HVAC&R terminal equipment and unitary equipment.

F. The work included in the commissioning process involves a complete and thorough evaluation of the operation and performance of all components, systems and sub-systems. The following equipment and systems shall be evaluated:

1. Split System Air Conditioning Unit
2. Exhaust Fans and Ventilation
3. High Volume Bay Fans
4. Infrared Heating System
5. Ductless Split Systems
6. Duct Work
7. Testing, Adjusting, Balancing
8. Building Automation System

3.10 DEFICIENCIES/NON-CONFORMANCE, COST OF RETESTING, FAILURE DUE TO MANUFACTURER DEFECT

A. Refer to Division 01 Section “General Commissioning Requirements” for requirements pertaining to deficiencies/non-conformance, cost of retesting, or failure due to manufacturer defect.

3.11 APPROVAL

A. Refer to Division 01 Section “General Commissioning Requirements” for approval procedures.

3.12 DEFERRED TESTING

A. Refer to Division 01 Section “General Commissioning Requirements” for requirements pertaining to deferred testing.

3.13 OPERATION AND MAINTENANCE MANUALS

A. The Operation and Maintenance Manuals shall conform to Contract Documents requirements as stated in Division 01.

B. Refer to Division 01 Section “General Commissioning Requirements” for the AE and CxA roles in the Operation and Maintenance Manual contribution, review and approval process.

C. An updated as-built version of the control drawings and sequences of operation shall be included in the final controls O&M manual submittal.

3.14 TRAINING OF OWNER PERSONNEL

A. Refer to Division 01 Section “General Commissioning Requirements” for requirements pertaining to training.

B. **Mechanical Contractor.** The mechanical contractor shall have the following training responsibilities:

1. Provide the CxA with a training plan two weeks before the planned training.
2. Provide designated Owner personnel with comprehensive orientation and training in the understanding of the systems and the operation and maintenance of each piece of HVAC equipment including, but not limited to, all HVAC equipment (ex. pumps, heat exchangers, chillers, heat rejection equipment, air conditioning units, air handling units, fans, terminal units, controls and water treatment systems, etc.)
3. Training shall normally start with classroom sessions followed by hands-on training on each piece of equipment, which shall illustrate the various modes of operation, including startup, shutdown, fire/smoke alarm, power failure, etc.
4. During any demonstration, should the system fail to perform in accordance with the requirements of the O&M manual or sequence of operations, the system will be repaired or adjusted as necessary and the demonstration repeated.

5. The appropriate trade or manufacturer's representative shall provide the instructions on each major piece of equipment. This person may be the start-up technician for the piece of equipment, the installing contractor or manufacturer's representative. Practical building operating expertise as well as in-depth knowledge of all modes of operation of the specific piece of equipment is required. More than one party may be required to execute the training.
6. The controls contractor shall attend sessions other than the controls training, as requested, to discuss the interaction of the controls system as it relates to the equipment being discussed.
7. The training sessions shall follow the outline in the Table of Contents of the operation and maintenance manual and illustrate whenever possible the use of the O&M manuals for reference.
8. Training shall include:

    a. Use of the printed installation, operation and maintenance instruction material included in the O&M manuals.

    b. A review of the written O&M instructions emphasizing safe and proper operating requirements, preventative maintenance, special tools needed and spare parts inventory suggestions. The training shall include start-up, operation in all modes possible, shut-down, seasonal changeover and any emergency procedures.

    c. Discussion of relevant health and safety issues and concerns.

    d. Discussion of warranties and guarantees.

    e. Common troubleshooting problems and solutions.

    f. Explanatory information included in the O&M manuals and the location of all plans and manuals in the facility.

    g. Discussion of any peculiarities of equipment installation or operation.

    h. The format and training agenda in The HVAC Commissioning Process, ASHRAE Guideline 1-2007, is recommended.

9. Hands-on training shall include start-up, operation in all modes possible, including manual, shut-down and any emergency procedures and preventative maintenance for all pieces of equipment.
10. The mechanical contractor shall fully explain and demonstrate the operation, function and overrides of any local packaged controls, not controlled by the central control system.
11. Training shall occur after functional testing is complete, unless approved otherwise by the Owner.

C. **Controls Contractor.** The controls contractor shall have the following training responsibilities:

1. Provide the CxA and AE with a training plan four weeks before the planned training.
2. The controls contractor shall provide designated Owner personnel training on the control system in this facility. The intent is to clearly and completely instruct the Owner on all the capabilities of the control system.
3. Training manuals. The standard operating manual for the system and any special training manuals will be provided for each trainee, with three extra copies left for the O&M

manuals. In addition, copies of the system technical manual will be demonstrated during training and three copies submitted with the O&M manuals. Manuals shall include detailed description of the subject matter for each session. The manuals will cover all control sequences and have a definitions section that fully describes all relevant words used in the manuals and in all software displays. Manuals will be approved by the CxA and AE. Copies of audiovisuals shall be delivered to the Owner.

4. The trainings will be tailored to the needs and skill-level of the trainees.

5. The trainers will be knowledgeable on the system and its use in buildings. For the on-site sessions, the most qualified trainer(s) will be used. The Owner shall approve the instructor prior to scheduling the training.

6. During any demonstration, should the system fail to perform in accordance with the requirements of the O&M manual or sequence of operations, the system will be repaired or adjusted as necessary and the demonstration repeated.

7. The controls contractor shall attend sessions other than the controls training, as requested, to discuss the interaction of the controls system as it relates to the equipment being discussed.

8. There shall be three (3) training sessions unless otherwise specified

    a. Training I. Control System. The first training shall consist of 8 hours of actual training. This training may be held on-site or in the supplier's facility. If held off-site, the training may occur prior to final completion of the system installation. Upon completion, each student, using appropriate documentation, should be able to perform elementary operations and describe general hardware architecture and functionality of the system.

    b. Training II. Building Systems. The second session shall be held on-site for a period of 8 hours of actual hands-on training after the completion of system commissioning. The session shall include instruction on:

        1) Specific hardware configuration of installed systems in this building and specific instruction for operating the installed system, including HVAC systems, lighting controls and any interface with security and communication systems.

        2) Security levels, alarms, system start-up, shut-down, power outage and restart routines, changing set points and alarms and other typical changed parameters, overrides, freeze protection, manual operation of equipment, optional control strategies that can be considered, energy savings strategies and set points that if changed will adversely affect energy consumption, energy accounting, procedures for obtaining vendor assistance, etc.

        3) All trending and monitoring features (values, change of state, totalization, etc.), including setting up, executing, downloading, viewing both tabular and graphically and printing trends. Trainees will actually set-up trends in the presence of the trainer.

        4) Every screen shall be completely discussed, allowing time for questions.

        5) Use of keypad or plug-in laptop computer at the zone level.

        6) Use of remote access to the system via phone lines or networks.

        7) Setting up and changing an air terminal unit controller.

8) Graphics generation

9) Point database entry and modifications

10) Understanding DDC field panel operating programming (when applicable)

c. Training III. The third training will be conducted on-site six months after occupancy and consist of 8 hours of training. The session will be structured to address specific topics that trainees need to discuss and to answer questions concerning operation of the system.

D. **TAB.** The TAB contractor shall have the following training responsibilities:

1. TAB shall meet for 4 hours with facility staff after completion of TAB and instruct them on the following:

a. Go over the final TAB report, explaining the layout and meanings of each data type.

b. Discuss any outstanding deficient items in control, ducting or design that may affect the proper delivery of air or water.

c. Identify and discuss any terminal units, duct runs, diffusers, coils, fans and pumps that are close to or are not meeting their design capacity.

d. Discuss any temporary settings and steps to finalize them for any areas that are not finished.

e. Other salient information that may be useful for facility operations, relative to TAB.

END OF SECTION 23 08 00

SECTION 26 08 00 - COMMISSIONING OF ELECTRICAL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

B. The OPR and BOD documentation are included by reference for information only.

1.2 SUMMARY

A. This section includes commissioning process requirements for Electrical systems, assemblies, and equipment.

B. Related Sections:

1. Division 01 Section "General Commissioning Requirements" for general commissioning process requirements.

1.3 DESCRIPTION

A. Refer to Division 01 Section “General Commissioning Requirements” for the description of commissioning.

1.4 DEFINITIONS

A. Refer to Division 01 Section “General Commissioning Requirements” for definitions.

1.5 SUBMITTALS

A. Refer to Division 01 Section “General Commissioning Requirements” for CxA’s role.

B. Refer to Division 01 Section “Submittals” for specific requirements. In addition, provide the following:

C. In addition, provide the following:
1. Certificates of readiness
2. Certificates of completion of installation, prestart, and startup activities.
3. O&M manuals
4. Test reports

1.6 QUALITY ASSURANCE

A. Test Equipment Calibration Requirements: Contractors will comply with test manufacturer's calibration procedures and intervals. Recalibrate test instruments immediately after instruments have been repaired resulting from being dropped or damaged. Affix calibration tags to test instruments. Furnish calibration records to CxA upon request.

1.7 COORDINATION

A. Refer to Division 01 Section "General Commissioning Requirements" for requirements pertaining to coordination during the commissioning process.

PART 2 - PRODUCTS

2.1 TEST EQUIPMENT

A. All standard testing equipment required to perform startup, initial checkout and functional performance testing shall be provided by the Contractor for the equipment being tested. For example, the electrical contractor of Division 26 shall ultimately be responsible for all standard testing equipment for the electrical systems and controls systems in Division 26. A sufficient quantity of two-way radios shall be provided by each contractor.

B. Special equipment, tools and instruments (specific to a piece of equipment and only available from vendor) required for testing shall be included in the base bid price to the Owner and left on site, except for stand-alone data logging equipment that may be used by the CxA.

C. Proprietary test equipment and software required by any equipment manufacturer for programming and/or start-up, whether specified or not, shall be provided by the manufacturer of the equipment. Manufacturer shall provide the test equipment, demonstrate its use, and assist in the commissioning process as needed. Proprietary test equipment (and software) shall become the property of the Owner upon completion of the commissioning process.

D. Data logging equipment and software required to test equipment will be provided by the CxA, but shall not become the property of the Owner.

E. All testing equipment shall be of sufficient quality and accuracy to test and/or measure system performance with the tolerances specified in the Specifications.

PART 3 - EXECUTION

3.1 GENERAL DOCUMENTATION REQUIREMENTS

A. With assistance from the installing contractors, the CxA will prepare Pre-Functional Checklists for all commissioned components, equipment, and systems

B. **Red-lined Drawings:**
1. The contractor will verify all equipment, systems, instrumentation, wiring and components are shown correctly on red-lined drawings.

2. Preliminary red-lined drawings must be made available to the Commissioning Team for use prior to the start of Functional Performance Testing.
3. Changes, as a result of Functional Testing, must be incorporated into the final as-built drawings, which will be created from the red-lined drawings.
4. The contracted party, as defined in the Contract Documents will create the as-built drawings.
5. Contractor will submit calibration verification forms for branch and building level meters

C. **Operation and Maintenance Data:**
1. Contractor will provide a digital copy of O&M literature within 45 days of each submittal acceptance for use during the commissioning process for all commissioned equipment and systems.
2. The CxA will review the O&M literature once for conformance to project requirements.
3. The CxA will receive a copy of the final approved O&M literature once corrections have been mad by the Contractor.

D. **Demonstration and Training:**
1. Contractor will provide demonstration and training as required by the specifications.
2. A complete training plan and schedule must be submitted by the Contractor to the CxA four weeks (4) prior to any training.
3. A training agenda for each training session must be submitted to the CxA one (1) week prior the training session.
4. The CA shall be notified at least 72 hours in advance of scheduled tests so that testing may be observed by the CA and Owner's representative. A copy of the test record shall be provided to the CA, Owner, and Architect.
5. Engage a Factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain specific equipment.
6. Train Owner's maintenance personnel on procedures and schedules for starting and stopping, trouble shooting, servicing, and maintaining equipment.
7. Review data in O&M Manuals.

E. **Systems manual requirements:**
1. The Systems Manual is intended to be a usable information resource containing all of the information related to the systems, assemblies, and Commissioning Process in one place with indexes and cross references.
2. The GC shall include final approved versions of the following information for the Systems Manual:
    a. As-Built System Schematics
    b. Verified Record Drawings
    c. Test Results (not otherwise included in Cx Record)
    d. Periodic Maintenance Information for computer maintenance management system
    e. Recommendations for recalibration frequency of sensors and actuators
    f. A list of contractors, subcontractors, suppliers, architects, and engineers involved in the project along with their contact information

g. Training Records, Information on training provided, attendees list, and any on-going training

3. This information shall be organized and arranged by building system, such as fire alarm, chilled water, heating hot water, etc.

4. Information should be provided in an electronic version to the extent possible. Legible, scanned images are acceptable for non-electronic documentation to facilitate this deliverable.

3.2 CONTRACTOR'S RESPONSIBILITIES

A. Perform commissioning tests at the direction of the CxA.

B. Attend commissioning coordination meetings.

C. Participate in Electrical systems, assemblies, equipment, and component maintenance orientation and inspection as directed by the CxA.

D. Provide information requested by the CxA for final commissioning documentation.

E. Include requirements for submittal data, operation and maintenance data, and training in each purchase order or sub-contract written.

F. Prepare preliminary schedule for Electrical system orientations and inspections, operation and maintenance manual submissions, training sessions, equipment start-up and task completion for owner. Distribute preliminary schedule to commissioning team members.

G. Update schedule as required throughout the construction period.

H. During the startup and initial checkout process, execute the related portions of the prefunctional checklists for all commissioned equipment.

I. Assist the CxA in all verification and functional performance tests.

J. Provide measuring instruments and logging devices to record test data, and provide data acquisition equipment to record data for the complete range of testing for the required test period.

K. Gather operation and maintenance literature on all equipment, and assemble as required by the specifications. Submit to CxA 45 days after submittal acceptance.

L. Coordinate with the CxA to provide 48-hour advance notice so that the witnessing of equipment and system start-up and testing can begin.

M. Notify the CxA a minimum of two weeks in advance of the time for start of the testing.

N. Participate in, and schedule vendors and contractors to participate in the training sessions.

O. Provide written notification to the GC and CxA that the following work has been completed in accordance with the contract documents, and that the equipment, systems, and sub-system are operating as required.

1. Lighting controls

P. The equipment supplier shall document the performance of his equipment.

Q. Provide a complete set of red-lined drawings to the CxA prior to the start of Functional Performance Testing.

R. Provide training of the Owner's operating staff using expert qualified personnel, as specified.

S. Equipment Suppliers
1. Provide all requested submittal data, including detailed start-up procedures and specific responsibilities of the Owner, to keep warranties in force.
2. Assist in equipment testing per agreements with contractors.
3. Provide information requested by CxA regarding equipment sequence of operation and testing procedures.

T. Refer to Division 01 Section "General Commissioning Requirements" for additional Contractor responsibilities.

3.3 OWNER'S RESPONSIBILITIES

A. Refer to Division 01 Section "General Commissioning Requirements" for Owner's Responsibilities.

3.4 DESIGN PROFESSIONAL'S RESPONSIBILITIES

A. Refer to Division 01 Section "General Commissioning Requirements" for Design Professional's Responsibilities.

3.5 CxA'S RESPONSIBILITIES

A. Refer to Division 01 Section "General Commissioning Requirements" for CxA's Responsibilities.

3.6 TESTING PREPARATION

A. Certify in writing to the CxA that Electrical systems, subsystems, and equipment have been installed, calibrated, and started and are operating according to the Contract Documents.

B. Certify in writing to the CxA that Electrical instrumentation and control systems have been completed and calibrated, that they are operating according to the Contract Documents, and that pretest set points have been recorded.

C. Certify in writing that testing procedures have been completed and that testing reports have been submitted, discrepancies corrected, and corrective work approved.

D. Place systems, subsystems, and equipment into operating mode to be tested (e.g., normal shutdown, normal auto position, normal manual position, duty cycle, emergency power, and alarm conditions).

E. Inspect and verify the position of each device and interlock identified on checklists.

F. Check safety cutouts, alarms, and interlocks with smoke control and life-safety systems during each mode of operation.

G. Testing Instrumentation: Install measuring instruments and logging devices to record test data as directed by the CxA.

3.7 GENERAL TESTING REQUIREMENTS

A. Provide technicians, instrumentation, and tools to perform commissioning test at the direction of the CxA.

B. Scope of Electrical testing shall include the entire Electrical installation, from the incoming power equipment throughout the distribution system. Testing shall include measuring, but not limited to resistance, voltage, and amperage of system(s) and devices.

C. Test all operating modes, interlocks, control responses, and responses to abnormal or emergency conditions, and verify proper response of building automation system controllers and sensors.

D. The CxA along with the Electrical contractor and other contracted subcontractors, including the fire alarm Subcontractor shall prepare detailed testing plans, procedures, and checklists for Electrical systems, subsystems, and equipment.

E. Tests will be performed using design conditions whenever possible.

F. Simulated conditions may need to be imposed using an artificial load when it is not practical to test under design conditions. Before simulating conditions, calibrate testing instruments. Provide equipment to simulate loads. Set simulated conditions as directed by the CxA and document simulated conditions and methods of simulation. After tests, return settings to normal operating conditions.

G. The CxA may direct that set points be altered when simulating conditions is not practical.

H. The CxA may direct that sensor values be altered with a signal generator when design or simulating conditions and altering set points are not practical.

I. If tests cannot be completed because of a deficiency outside the scope of the Electrical system, document the deficiency and report it to the Owner. After deficiencies are resolved, reschedule tests.

J. If the testing plan indicates specific seasonal testing, complete appropriate initial performance tests and documentation and schedule seasonal tests.

3.8 ELECTRICAL SYSTEMS, SUBSYSTEMS, AND EQUIPMENT TESTING PROCEDURES

A. **Equipment Testing and Acceptance Procedures:** Testing requirements are specified in individual Division 26 sections. Provide submittals, test data, inspector record, infrared camera and certifications to the CA.

B. **Electrical Instrumentation and Control System Testing:** Assist the CxA with preparation of testing plans.

C. The work included in the commissioning process involves a complete and thorough evaluation of the operation and performance of all components, systems and sub-systems. The following equipment and systems shall be evaluated:

1. ***Emergency Power Systems***
2. ***Electrical Distribution System***
3. ***Lighting Controls***

3.9 DEFICIENCIES/NON-CONFORMANCE, COST OF RETESTING, FAILURE DUE TO MANUFACTURER DEFECT

A. Refer to Division 01 Section "General Commissioning Requirements" for requirements pertaining to deficiencies/non-conformance, cost of retesting, or failure due to manufacturer defect.

3.10 APPROVAL

A. Refer to Division 01 Section "General Commissioning Requirements" for approval procedures.

3.11 DEFERRED TESTING

A. Refer to Division 01 Section "General Commissioning Requirements" for requirements pertaining to deferred testing.

3.12 OPERATION AND MAINTENANCE MANUALS

A. The Operation and Maintenance Manuals shall conform to Contract Documents requirements as stated in Division 01.

B. Refer to Division 01 Section "General Commissioning Requirements" for the AE and CxA roles in the Operation and Maintenance Manual contribution, review and approval process.

3.13 TRAINING OF OWNER PERSONNEL

A. Refer to Division 01 Section "General Commissioning Requirements" for requirements pertaining to training.

B. **Electrical Contractor.** The electrical contractor shall have the following training responsibilities:

1. Provide the CA with a training plan two weeks before the planned training.
2. Provide designated Owner personnel with comprehensive training in the understanding of the systems and the operation and maintenance of each major piece of commissioned electrical equipment or system.
3. Training shall start with classroom sessions, if necessary, followed by hands on training on each piece of equipment, which shall illustrate the various modes of operation, including startup, shutdown, fire/smoke alarm, power failure, etc.
4. During any demonstration, should the system fail to perform in accordance with the requirements of the O&M manual or sequence of operations, the system will be repaired or adjusted as necessary and the demonstration repeated.
5. The appropriate trade or manufacturer's representative shall provide the instructions on each major piece of equipment. This person may be the start-up technician for the piece of equipment, the installing contractor or manufacturer's representative. Practical building operating expertise as well as in-depth knowledge of all modes of operation of the specific piece of equipment is required. More than one party may be required to execute the training.
6. The training sessions shall follow the outline in the Table of Contents of the operation and maintenance manual and illustrate whenever possible the use of the O&M manuals for reference.
7. Training shall include:
    a. Use the printed installation, operation and maintenance instruction material included in the O&M manuals.
    b. Include a review of the written O&M instructions emphasizing safe and proper operating requirements, preventative maintenance, special tools needed and spare parts inventory suggestions. The training shall include start-up, operation in all modes possible, shut-down, seasonal changeover and any emergency procedures.
    c. Discuss relevant health and safety issues and concerns.
    d. Discuss warranties and guarantees.
    e. Cover common troubleshooting problems and solutions.
    f. Explain information included in the O&M manuals and the location of all plans and manuals in the facility.
    g. Discuss any peculiarities of equipment installation or operation.
8. Hands-on training shall include start-up, operation in all modes possible, including manual, shut-down and any emergency procedures and preventative maintenance of all pieces of equipment.
9. The electrical contractor shall fully explain and demonstrate the operation, function and overrides of any local packaged controls, not controlled by the central control system.
10. Training shall occur after functional testing is complete, unless approved otherwise by the Owner's.

END OF SECTION 26 08 00