011200 - CONTRACT SUMMARY OF WORK

PART 1 - General

1.1 Related documents

A. The contract documents, including but not limited to, the drawings and individual specification sections, apply to this section.

1.2 Summary

A. Section includes a summary of each contract for the project, including responsibilities for coordination.

B. Specific requirements for the work of each contract are also indicated in individual specification sections and on drawings for each contract.

C. Related sections:

1. Section 013100 - Project management and coordination.
2. Section 013200 - Construction progress documentation.
3. Section 015000 - Temporary facilities and controls.

1.3 Project information

A. Project identification: Rockland Psychiatric Center - Building 1 Renovation and Abatement Project

1. Building address: 140 Old Orangeburg Road, Orangeburg, New York 10962

B. Owner: Dormitory Authority of the State of New York (DASNY), 515 Broadway, Albany, New York 12207-2964.

C. Architect: Goshow Architects, 589 8th Avenue, 7th floor, New York, New York 10018

D. Architect's consultants: The architect has retained the following design professionals who have prepared designated portions of the contract documents:

1. MEP - DVL Consulting Engineering

2. Environmental - Quality Environmental Solutions

3. Structural – WSP Group

4. Elevator – George D. Cattabiani & Associates, Inc.

1.4 WORK COVERED BY CONTRACT DOCUMENTS

1.5 The project is subject to Wick's Law and requires separate but coordinated Bid Documents

The work of project is defined by the contract documents and consists of the following:

Building 1 at the Rockland Psychiatric Center will be completely renovated to provide a Community Center for people to transition from hospital/residential settings and integrate into the community. The client has developed specific goals which will be incorporated into the design and includes the following:

- Addition of an elevator with 2 stops;
- Renovation of the large first floor Room 114 into one open area to be called the Living Museum to include three sections; an Art Studio, an Education and Volunteering Room and an Addiction and Recovery Room;
- Addition of a Café;
- Addition of an exterior ramp;
- Minimal demolition and addition of new walls for space reconfiguration;
- Replacement of windows, plumbing fixtures and wall, floor and ceiling finishes in all rooms to improve the aesthetical and environmental qualities of the center;
- Relocation of furniture from other buildings;
- Provide the necessary mechanical, electrical, structural and acoustic support.

1.6 ACCESS TO SITE

A. General: Contractor shall have full use of project site for construction operations during construction period. Contractor's use of project site is limited only by owner's right to perform work or to retain other contractors on portions of project.

B. Use of site: Limit use of project site to areas within the contract limits indicated. Do not disturb portions of project site beyond areas in which the work is indicated.

1. Limits: confine construction operations to limit of work shown on drawings.
2. Driveways, walkways and entrances: keep driveways and entrances serving premises clear and available to owner, owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.

a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

C. Condition of existing building: maintain portions of existing building affected by construction operations in a weathertight condition throughout construction periods. Prior to opening any areas that will impact the integrity of the building envelope, submit a protection plan for review by the architect & owner. Repair damage caused by construction operations.

1.7 WORK RESTRICTIONS

A. Work restrictions, general: comply with restrictions on construction operations.

1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.

B. On-site work hours: limit work in the existing building to normal business working hours Monday through Friday, unless otherwise indicated.

1. Weekend hours: any work scheduled to occur during weekend hours will need prior approval from the owner.
2. Night or early morning hours: any work scheduled to occur outside of normal business hours will need prior approval from the owner.
3. Contractor shall refer to plans for complete scope of work. Abatement work shall be performed during off-hours beginning at 10pm and ending at 6am when areas are not occupied.

C. Existing utility interruptions: Do not interrupt utilities serving facilities occupied by owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:

1. Notify owner not less than two days in advance of proposed utility interruptions.

D. Noise, vibration, and odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to owner occupancy with owner..

1. Notify owner not less than two days in advance of proposed disruptive operations.
2. Contractor shall coordinate disruptive work with owner to avoid scheduled testing and exam periods. Contractor may not perform work during scheduled graduation or final exams unless the owner has granted explicit approval in writing.

E. Controlled substances: use of tobacco products, alcohol and other controlled substances on project site is not permitted.

F. Employee identification: owner will provide identification tags for contractor personnel working on project site. Require personnel to use identification tags at all times.

1.8 SPECIFICATION AND DRAWING CONVENTIONS

A. Specification content: the specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1. Imperative mood and streamlined language are generally used in the specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
2. Specification requirements are to be performed by contractor unless specifically stated otherwise.

B. Division 01 general requirements: Requirements of sections in division 01 apply to the work of all sections in the specifications.

C. Drawing coordination: Requirements for materials and products identified on drawings are described in detail in the specifications. One or more of the following are used on drawings to identify materials and products:

1. Terminology: Materials and products are identified by the typical generic terms used in the individual specifications sections.
2. Abbreviations: Materials and products are identified by abbreviations published as part of the U.S. National cad standard and scheduled on drawings.
3. Keynoting: Materials and products are identified by reference keynotes referencing specification section numbers found in this project manual.

1.9 CONTRACTOR'S PROJECT MANAGER

A. Contractor and each sub-contractor shall identify a project manager who shall be responsible for coordination between and among each and all contractors and subcontractors for the project and the owner.

1.10 COORDINATION ACTIVITIES

A. Coordination activities of contractor's project manager include, but are not limited to, the following:

1. Provide overall coordination of the work
2. Coordinate subcontractor's access to shared workspaces.
3. Coordinate product selections for compatibility. Identify to owner and design professional incompatibilities between products.
4. Provide overall coordination of temporary facilities and controls.
5. Coordinate, schedule, and approve interruptions of permanent and temporary utilities, including those necessary to make connections for temporary services.
6. Coordination of exploratory demolition with design professional and owner
7. Coordinate construction and operations of the work with work performed by each other separate contract for the project and the owner's construction forces.
8. Prepare coordinated composite drawings, in collaboration with each other contractor for the project, to coordinate the work of the contracts for the project.
9. Coordinate sequencing and scheduling of the work. Include the following:

    a. Initial coordination meeting: at earliest possible date, the owner will arrange and conduct a meeting with all contractors for the project for sequencing and coordinating the work of the project.

10. Provide quality assurance and quality control services specified in section 014000 – quality and code requirements.
11. Coordinate sequence of activities to accommodate tests and inspections, and coordinate schedule of tests and inspections.
12. Provide information necessary to adjust, move, or relocate existing utility structures affected by construction.
13. Provide progress cleaning of all contract work areas and coordinate progress cleaning of areas or pieces of equipment where more than one contractor has worked.
14. Coordinate cutting and patching.
15. Coordinate protection of the work.

16. Coordinate firestopping.
17. Coordinate completion of punch list items.
18. Coordinate preparation of as-built drawings and specifications.
19. Print and submit all required project turnover documents.
20. Coordinate preparation of operation and maintenance manuals.

1.11 GENERAL REQUIREMENTS OF CONTRACTS

A. Extent of contract: Requirements indicated on drawings and in specification sections determine which contract includes a specific element of the work of the contract.

1. The work described in this section for each contract shall be complete systems and assemblies, including products, components, accessories, and installation required by the respective contract documents.
2. The contractor shall be responsible for the following:
   a. Blocking, backing panels, sleeves, and metal fabrication supports.
   b. Painting.
   c. Cutting and patching.
   d. Firestopping

B. Substitutions: The contractor shall submit substitution requests with the submittals for any applicable material included in the contract documents as indicated in section 016000 – product requirements. Contractor's project manager shall coordinate approved substitutions with remainder of the work of the project. Substitutions will not be allowed for sole source items identified in the project.

C. Temporary facilities and controls: In addition to specific responsibilities for temporary facilities and controls indicated in this section and in section 015000 - temporary facilities and controls, contractor is responsible for the following:
1. Plug-in electric power cords and extension cords, supplementary plug-in task lighting, and special lighting necessary exclusively for its own activities.
2. Temporary enclosures for its own construction activities.
3. Waste disposal facilities, including collection and legal disposal of its own hazardous, dangerous, unsanitary, or other harmful waste materials.
4. Progress cleaning of work areas affected by its operations on a daily basis.
5. Secure lockup of its own tools, materials, and equipment.
6. Construction aids and miscellaneous services and facilities necessary exclusively for its own construction activities.

1.12 GENERAL CONSTRUCTION WORK

A. Scope of work includes, but is not limited to, the following:

1. Remaining work not identified as work under other contracts.
2. Hazardous material abatement.
3. Selective demolition.
4. Interior construction, including partitions, doors and fittings.
5. Interior finishes finish carpentry and built-in casework.

B. Temporary facilities and controls in the general construction scope of work include, but are not limited to, the following:

1. Temporary facilities and controls required for the contract.
2. Project identification and temporary signs.
3. General waste disposal facilities.
4. Pest control.
5. Temporary fire-protection facilities.
6. Barricades, warning signs, and lights.
7. Security enclosure and lockup.
8. Environmental protection.

1.13 PLUMBING AND FIRE PROTECTION WORK

A. Scope of work includes, but is not limited to, the following:

1. Plumbing fixtures.
2. Domestic water distribution.
3. Sanitary waste.
4. Plumbing connections to equipment furnished under this contract.

B. Temporary facilities and controls in the plumbing work include, but are not limited to, the following:

1. Piped sewerage and drainage.
2. Plumbing connections to existing systems and temporary facilities and controls furnished under this contract.

1.14 ELECTRICAL, FIRE ALARM, SECURITY AND TELECOM WORK

A. Scope of work includes, but is not limited to, the following:

1. Electrical service and distribution.

B. Temporary facilities and controls in the electrical work include, but are not limited to, the following:

1. Electric power service and distribution.
2. Lighting, including site lighting.
3. Electrical connections to existing systems and temporary facilities and controls furnished under the contract.

PART 2 - Products (not used)
PART 3 - Execution (not used)

END OF SECTION 011200

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SECTION 012900 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The Contract Documents, including but not limited to, the Drawings and Individual Specification Sections, Schedule of Values, Contractor Pencil Copy and Application for Payment, apply to this Section.

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements necessary to prepare and process Applications for Payment.

B. Related Sections:

1. General Conditions, Article 8 - Payment, for requirements governing provisions for payment.
2. General Conditions, Article 20 – Opportunity Programs, for requirements governing minority participation.
3. Section 017700 – Contract Closeout Requirements, for administrative contract closeout requirements.

1.3 DEFINITIONS

A. Schedule of Values: A form in the Contract Documents, which establishes minimum level of payment detail to formulate an initial Application for Payment.

B. Contractor’s Pencil Copy: A form provided by the Owner, which estimates a billing request from the Contractor. When approved by the Owner, formulates the Application for Payment.

C. Application for Payment: A form provided by the Owner, which provides certification by the Contractor for payment.

1.4 SCHEDULE OF VALUES

A. Coordination: Coordinate preparation of the Schedule of Values with the Owner.

B. The Contractor shall allocate portions of the Contract Sum to labor, material and major equipment costs to various portions of the Work as indicated on the form.

1. Submit the Schedule of Values to the Owner, for approval at earliest possible date after award of the Contract.

2. The Owner shall not approve any billing request until the Schedule of Values is approved.

C. Format and Content: Use model form provided in Contract Documents as a guide to establish line items for the Schedule of Values.

1. Arrange the Schedule of Values with separate columns to indicate the following for each item listed:

a. Dollar value of the following, as a percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.

1) Labor.
2) Materials.
3) Major Equipment.

2. Provide a breakdown of Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Provide multiple line items for principal subcontract amounts in excess of five percent of Contract Sum.

a. Include separate line items under Contractor and principal subcontracts for LEED documentation, if applicable and other project closeout requirements in an amount totaling five percent of the Contract Sum and subcontract amount.

3. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
4. Allowances: If applicable, provide a separate line item in the schedule of values for each allowance.
5. Each item in the Schedule of Values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item, except Lump Sum and Quantity of Work Allowances.
6. Schedule of Values Updating: The Owner may require the Contractor to revise its Schedule of Values. Further, the Owner reserves the right to accept only those cost distributions which, in the Owner's opinion, are reasonable, equitably balanced and correspond to estimated quantities in Contract Documents.

1.5 MONTHLY APPLICATIONS FOR PAYMENT

A. Each Application for Payment shall be consistent with previous applications and payments as approved by the Owner and paid for by the Owner.

1. Initial Application for Payment, the Owner shall not approve any billing request until the Schedule of Values and Construction Schedule is approved.
2. Payment for allowance items and stored materials involve additional requirements.
3. Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.

B. Payment Application Times: Billing request may be submitted to the Owner once each month.

1. Submit Contractor's Pencil Copy billing request seven days prior to due date for review by the Owner.

C. Payment Forms: All forms and documents required for payment shall be provided by the Owner. Template forms and documents may also be available on the Dormitory Authority's web site www.dasny.org.

D. Preliminary Procedure: The Contractor may request from the Owner a Contractor's Pencil Copy form. Where indicated on the form, the Contractor shall enter a billing request, either dollar amount or percentage complete for each item number requesting payment.

1. If applicable, the Contractor shall obtain from the Owner, an Allowance Notice to Proceed for Allowance items and an Agreement for Materials Stored Off-Site prior to billing.
2. Submit Contractor's Pencil Copy billing request to the Owner for approval.
3. The Contractor shall provide updated documentation to the Owner in accordance with General Conditions, Article 20 – Opportunity Programs.

E. Procedure: Upon the Owner's approval of the Contractor's Pencil Copy billing request, payment documents will be provided to the Contractor. The Contractor shall complete each document and submit two copies of all documents with original signature & notary where indicated on forms, the following:

1. Application for Payment.
2. Compliance Report.
3. Contractor and Subcontractor Certifications Form
4. Contractor's Certified Payroll Form.
5. Allowance Allocation Form, if applicable

F. Payroll Forms: The Contractor and all Sub-contractors to the Contractor shall submit original copies of the Contractor and Subcontractor Certifications Form and Contractor's Certified Payroll Form.

G. Transmittal: Sign and notarize where indicated on each document, submit two original copies to Owner.

1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about payment.

H. Stored Materials: The Owner will provide an Agreement for Materials Stored Off-Site and specific forms that the Contractor must complete and submit to the Owner, including but not limited to;

1. Include in the Contractor's Pencil Copy billing request amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed.
2. Differentiate between items stored on-site and items stored off-site.
3. Provide certificate of insurance, evidence of transfer of title to the Owner, and consent of surety to payment, for stored materials.

4. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials.
5. Provide summary documentation for stored materials indicating the following:

    a. Materials previously stored and included in previous Applications for Payment.
    b. Work completed for this Application utilizing previously stored materials.
    c. Additional materials stored with this Application.
    d. Total materials remaining stored, including materials with this Application.

I. Payment: Timely payment by the Owner to the Contractor is governed by Section 2880 of the Public Authorities Law.

J. Liens: Upon receipt of a lien, the Owner shall deduct a sum of one and one-half (1 ½) times the amount stated to be due in the notice of lien from the application for payment. Upon official receipt of discharge of lien, the Owner shall provide payment as stated above.

1.6 APPLICATION FOR PAYMENT AT SUBSTANTIAL COMPLETION

A. Preliminary Procedure: After issuance of the executed Notice of Substantial Completion, submit a Contractor's Pencil Copy billing request showing 100 percent completion for portion of the Work claimed as complete at Substantial Completion.

1. Submit Contractor's Pencil Copy billing request to the Owner for approval.
2. The Contractor shall provide final documentation to the Owner in accordance with General Conditions, Article 20 – Opportunity Programs.

B. Reduction of Retainage: The Contractor may request a reduction of retainage upon Substantial Completion of the Work or when a phase of Work is accepted by the Owner.

1. The Contractor submits to the Owner a written request to have retainage reduced and provides a cost estimate and schedule to complete all remaining Work items indicated on the executed Notice of Substantial Completion.
2. The Owner shall deduct from the sum two times the value of remaining items of Work to be completed or corrected.
3. The Owner will provide the Contractor with General Release and Consent of Surety forms based on the amount of reduction. The Contractor shall complete each document and submit three copies of each document with original signature & notary where indicated on forms.
4. The Owner shall hold payment until receipt of completed General Release and Consent of Surety forms.

C. Procedures: Upon the Owner approval of Contractor's Pencil Copy billing request, payment documents will be provided to the Contractor. The Contractor shall complete each document and submit two copies of all documents with original signature & notary where indicated on forms, the following:

1. Application for Payment.
2. Compliance Report.

3. Contractor and Subcontractor Certifications Form
4. Contractor's Certified Payroll Form.

D. Payroll Forms: The Contractor and all Sub-contractors to the Contractor shall submit original copies of the Contractor and Subcontractor Certifications Form and Contractor's Certified Payroll Form.

E. Transmittal: Sign and notarize where indicated on each document, submit two original copies to Owner.

F. Payment: Timely payment by the Owner to the Contractor is governed by Section 2880 of the Public Authorities Law.

G. Liens: Upon receipt of a lien, the Owner shall deduct a sum of one and one-half (1 ½) times the amount stated to be due in the notice of lien from the application for payment. Upon official receipt of discharge of lien, the Owner shall provide payment as stated above.

1.7 FINAL APPLICATION FOR PAYMENT (same as contract closeout documents)

A. Contract Compliance: The Contractor shall comply with the Requirements of General Conditions, Section 10.08 – Limitations on Actions.

B. Preliminary Procedure: All Work and Extra Work of the Contract and all requirements of Section 017700 – Contract Closeout Requirements must be complete and approved prior to commencement of final Application for Payment.

1. The Contractor shall request and submit to the Owner a final Contractor's Pencil Copy that will formulate the final Application for Payment.
2. The Contractor shall provide outstanding documentation to the Owner in accordance with General Conditions, Article 20 – Opportunity Programs.

C. Procedures: Upon the Owner approval of Contractor's Pencil Copy billing request, final Application for Payment and Contract closeout documents will be provided to the Contractor. The Contractor shall complete each document and submit two copies of all documents with original signature & notary, where indicated on the forms, the following:

1. Final Application for Payment including remaining Retainage.
2. Final Compliance Report.
3. Contractor and Subcontractor Certifications Form
4. Contractor's Certified Payroll Form.
5. Release Form -- Final Payment to Contractor.
6. Consent of Surety -- Final Payment to Contractor, with power of attorney.

D. Payroll Forms: The Contractor and all Sub-contractors to the Contractor shall submit original copies of the Contractor and Subcontractor Certifications Form and Contractor's Certified Payroll Form.

E. Transmittal: Sign and notarize where indicated on each document, submit two original copies to the Owner.

F. Final Payment: Timely payment by the Owner to the Contractor is governed by Section 2880 of the Public Authorities Law.

G. Liens: Upon receipt of a lien, the Owner shall deduct a sum of one and one-half (1 ½) times the amount stated to be due in the notice of lien from the final application for payment. Upon official receipt of discharge of lien, the Owner shall provide final payment as stated above.

PART 2 - PRODUCTS (Not Used)
PART 3 - EXECUTION (Not Used)

END OF SECTION 012900

SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The Contract Documents, including but not limited to, the Drawings and individual Specification Sections and Contract Manager, apply to this Section.

1.2 SUMMARY

A. Section includes administrative provisions for coordinating construction operations on the Project including, but not limited to, the following:

1. General project coordination procedures.
2. Administrative and supervisory personnel.
3. Coordination drawings.
4. Requests for Information (RFIs).
5. Contract Manager software site.
6. Project meetings.

B. Each contractor shall participate in coordination requirements. Refer to Section 011200 – Contract Summary of Work for certain areas of responsibility that are assigned to a specific contractor.

C. Related Sections:

1. Section 011200 - Contract Summary of Work, for a description of the division of work among separate contracts and responsibility for coordination activities not in this Section.
2. Section 013200 - Project Scheduling and Progress Documentation, for preparing and submitting Contractor's construction schedule.
3. Section 017700 – Contract Closeout Requirements, for coordinating closeout of the Contract.

1.3 DEFINITIONS

A. RFI: Request from the Owner, Design Professional, or Contractor seeking information from each other during construction.

1.4 COORDINATION

A. Coordination for Multi Contracts Project: Every Contract associated with the Project may not be executed at the same time and each contractor shall coordinate its construction operations with those of other contractors and entities to ensure efficient and orderly installation of each

part of the work. Each contractor shall coordinate its operations with operations, included in different Sections that depend on each other for proper installation, connection, and operation.

1. Each Contractor shall utilize the bid milestone schedule included in the Contract Documents to prepare a CPM schedule, of their Work, in accordance with Section 013200 – Project Scheduling and Progress Documentation. The Owner will furnish the bid milestone schedule template, in electronic file, to each Contractor after the Notice to Proceed.
2. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
3. Coordinate installation of different components with other contractors to ensure maximum performance and accessibility for required maintenance, service, and repair.
4. Make adequate provisions to accommodate items scheduled for later installation.

B. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Coordination of the Owner's P6 Project Management CPM schedule.
2. Coordination of the commissioning process and activities.
3. Preparation of the schedule of values.
4. Entering dates each required submission item listed on the Contractor’s Submission Schedule will be submitted, coordinated with the CPM Schedule.
5. Installation and removal of temporary facilities and controls.
6. Delivery and processing of submittals.
7. Progress meetings.
8. Preinstallation conferences.
9. Project closeout activities.
10. Startup and adjustment of systems.

C. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.

1.5 COORDINATED COMPOSITE DRAWINGS

A. Coordinated Composite Drawings, General: Prepare coordinated composite drawings in accordance with requirements in individual Sections, where installation is not completely shown on Shop Drawings, where limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity.

1. Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Do not base coordinated composite drawings on standard printed data. Include the following information, as applicable:

a. Use applicable Drawings as a basis for preparation of coordinated composite drawings. Prepare sections, elevations, and details as needed to describe relationship of various systems and components.
b. Coordinate the addition of trade-specific information to the coordinated composite drawings by multiple contractors in a sequence that best provides for coordination of the information and resolution of conflicts between installed components before submitting for review.
c. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
d. Indicate space requirements for routine maintenance and for anticipated replacement of components during the life of the installation.
e. Show location and size of access doors required for access to concealed dampers, valves, and other controls, including space required opening the access door.
f. Indicate required installation sequences.
g. Indicate dimensions shown on the Drawings. Specifically note dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to the Design Professional indicating proposed resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.

B. Coordinated Composite Drawing Organization: Organize drawings as follows:

1. Floor Plans and Reflected Ceiling Plans: Show architectural and structural elements, and mechanical, plumbing, fire protection, fire alarm, and electrical Work. Show locations of visible ceiling-mounted devices relative to acoustical ceiling grid. Supplement plan drawings with section drawings where required to adequately represent the Work.
2. Plenum Space: Indicate subframing for support of ceiling and wall systems, mechanical and electrical equipment, and related Work. Locate components within ceiling plenum to accommodate layout of light fixtures indicated on the Drawings. Indicate areas of conflict between light fixtures and other components.
3. Mechanical Rooms: Provide coordinated composite drawings for mechanical rooms showing plans and elevations of mechanical, plumbing, fire protection, fire alarm, and electrical equipment.
4. Structural Penetrations: Indicate penetrations and openings required for all disciplines.
5. Slab Edge and Embedded Items: Indicate slab edge locations and sizes and locations of embedded items for metal fabrications, sleeves, anchor bolts, bearing plates, angles, door floor closers, slab depressions for floor finishes, curbs and housekeeping pads, and similar items.
6. Mechanical and Plumbing Work: Show the following:

    a. Sizes and bottom elevations of ductwork, piping, and conduit runs, including insulation, bracing, flanges, and support systems.
    b. Dimensions of major components, such as dampers, valves, diffusers, access doors, cleanouts and electrical distribution equipment.
    c. Fire-rated enclosures around ductwork.

7. Electrical Work: Show the following:

    a. Runs of vertical and horizontal conduit 1-1/4 inch diameter and larger.

b. Light fixture, exit light, emergency battery pack, smoke detector, and other fire alarm locations.
c. Panel board, switch board, switchgear, transformer, busway, generator, and motor control center locations.
d. Location of pull boxes and junction boxes dimensioned from column center lines.

C. Coordination Digital Data Files: Prepare coordination digital data files in accordance with the following requirements:

1. File Preparation Format: The Contractor shall coordinate with the Design Professional and use the same digital data software program, version, and operating system as the original Drawings.

1.6 KEY PERSONNEL

A. Key Personnel Names: Within 15 days after receipt of the Notice to Proceed, submit a list of key personnel assignments with resume and job qualifications, including project manager, project scheduler, commissioning agent, superintendent and other personnel in attendance at the Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home, office, and cellular telephone numbers, and email addresses. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to the Project.

1.7 REQUESTS FOR INFORMATION (RFIs)

A. General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents, the Contractor shall prepare and submit an RFI in the form specified.

1. Coordinate and submit RFIs in a prompt manner so as to avoid delays in the Contractor's work or work of subcontractors.

B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:

1. Project name.
2. Project number.
3. Date.
4. Name of Contractor.
5. Name of Design Professional.
6. RFI number, numbered sequentially.
7. RFI subject.
8. Specification Section number and title and related paragraphs, as appropriate.
9. Drawing number and detail references, as appropriate.
10. Field dimensions and conditions, as appropriate.
11. Contractor's suggested resolution. If Contractor's solution(s) impacts the date of Substantial Completion or the Contract Sum, Contractor shall state impact in the RFI.
12. Contractor's signature.

13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.

    a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.

C. RFI Forms: The Owner's Contract Manager-generated form with substantially the same content as indicated above.

D. Design Professional's Action: The Design Professional will review each RFI, determine action required, and respond. Allow a reasonable amount of working days for the Design Professional's response for each RFI. RFIs received by the Design Professional after 1:00 p.m. will be considered as received the following working day.

1. The following RFIs will be returned without action:

    a. Requests for approval of submittals.
    b. Requests for approval of substitutions.
    c. Requests for coordination information already indicated in the Contract Documents.
    d. Requests for adjustments in the date for Substantial Completion or the Contract Sum.
    e. Requests for interpretation of the Design Professional's actions on submittals.
    f. Incomplete RFIs or inaccurately prepared RFIs.

2. The Design Professional's action may include a request for additional information, in which case the Design Professional's time for response will date from time of receipt of additional information.
3. The Design Professional's action on RFIs that may result in a change to the date of Substantial Completion or the Contract Sum may be eligible for the Contractor to submit a Claim in accordance with procedures in General Conditions, Article 10 – Claims and Disputes.

    a. If the Contractor believes the RFI response warrants change in the date of Substantial Completion or the Contract Sum, notify the Owner in writing within fifteen (15) days of receipt of the RFI response.

E. On receipt of the Design Professional's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify the Owner and Design Professional within five days if the Contractor disagrees with response.

F. RFI Log: Coordinate and cooperate with the Owner to prepare, update and maintain the use of the Contract Manager RFI log. The RFI log will include not less than the following:

1. Project name.
2. Name and address of Contractor.
3. Name and address of Design Professional.
4. RFI number including RFIs that were dropped and not submitted.
5. RFI description.

6. Date the RFI was submitted.
7. Date Design Professional's response was received.
8. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.
9. Identification of related Field Order, Work Change Directive, and Proposal Request, as appropriate.

1.8 CONTRACT MANAGER SOFTWARE SITE

A. Coordinate and cooperate with the Owner for managing project communication and documentation until Contract Closeout. The Contract Manager software site may include, but is not limited to, the following functions:

1. Project directory.
2. Project correspondence.
3. Meeting minutes.
4. Contract modifications forms and logs.
5. RFI forms and logs.
6. Task and issue management.
7. Submittals forms and logs.
8. Payment application forms.
9. Online document collaboration.
10. Reminder and tracking functions.
11. Archiving functions.

1.9 PROJECT MEETINGS

A. General: The Owner and/or Design Professional will schedule and conduct meetings at the Project site, unless otherwise indicated.

1. Attendees: The Owner and/or Design Professional will inform participants and others involved, and individuals whose presence is required, of date and time of each meeting.
2. Agenda: The Owner and/or Design Professional will prepare the meeting agenda through the use of the Owner's Contract Manager software and distribute the agenda to all invited attendees.
3. Minutes: The Owner and/or Design Professional will record significant discussions and agreements achieved in Contract Manager and distribute the meeting minutes to everyone concerned.

B. Construction Kick-off Meeting: The Owner will schedule and conduct a construction kick-off meeting before starting construction, at a time convenient to the Owner and Design Professional, upon issuance of the Notice to Proceed.

1. The meeting shall review responsibilities and personnel assignments.
2. Attendees: The Owner, Owner's Commissioning Authority, Design Professional, and their consultants; the Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the meeting shall

be familiar with the Project and authorized to make binding decisions on matters relating to the Work.

3. Agenda: The meeting agenda will include items of significance that could affect progress, including the following:

   a. Tentative construction schedule.
   b. Phasing.
   c. Critical work sequencing and long-lead items.
   d. Designation of key personnel and their duties.
   e. Lines of communications.
   f. Procedures for processing field decisions and Change Orders.
   g. Procedures for RFIs.
   h. Procedures for testing and inspecting.
   i. Procedures for processing Applications for Payment.
   j. Distribution of the Contract Documents.
   k. Submittal procedures.
   l. Sustainable design requirements.
   m. Preparation of As-builts and turnover documents.
   n. Use of the premises.
   o. Work restrictions.
   p. Working hours.
   q. Owner's occupancy requirements.
   r. Responsibility for temporary facilities and controls.
   s. Procedures for moisture and mold control.
   t. Procedures for disruptions and shutdowns.
   u. Construction waste management and recycling.
   v. Parking availability.
   w. Office, work, and storage areas.
   x. Equipment deliveries and priorities.
   y. First aid.
   z. Security.
   aa. Progress cleaning.
   bb. Safety.

4. Minutes: The Owner and/or Design Professional will use Contract Manager to record and distribute meeting minutes.

C. Progress Meetings: The Owner will conduct progress meetings at regular intervals.

1. Coordinate dates of meetings with preparation of payment requests.
2. Attendees: The Owner’s Commissioning Authority, and Design Professional, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with the Project and authorized to make binding decisions on matters relating to the Work.
3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of the Project.

a. The Project Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to the Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.

1) Review schedule for next scheduled progress meeting period.

b. Review present and future needs of each entity present, including the following:

1) Interface requirements.
2) Sequence of operations.
3) Status of submittals.
4) Deliveries.
5) Off-site fabrication.
6) Access.
7) Site utilization.
8) Temporary facilities and controls.
9) Progress cleaning.
10) Quality and work standards.
11) Status of correction of deficient items.
12) Field observations.
13) Status of RFIs.
14) Status of proposal requests.
15) Pending changes.
16) Status of Change Orders.
17) Pending claims and disputes.
18) Documentation of information for payment requests.

4. Minutes: The Owner and/or Design Professional entity responsible for conducting the meeting will use Contract Manager to record and distribute the meeting minutes to each party present and to parties requiring information.

a. Schedule Updating: Coordinate with the Owner to revise the Project Schedule after each progress meeting where revisions to the schedule have been made or recognized. The Owner will issue revised schedule concurrently with the report of each meeting.

D. Preinstallation Meetings: The Owner may conduct preinstallation meetings at the Project site before each construction activity that requires coordination with other construction and major assemblies of the Work requiring tight control and coordination.

1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow shall attend the meeting. The Owner to advise the Contractor, Design Professional and Owner's Commissioning Authority of scheduled meeting dates.
2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:

a. Contract Documents.
b. Options.
c. Related RFIs.
d. Related Change Orders.
e. Purchases.
f. Deliveries.
g. Submittals.
h. Review of mockups.
i. Possible conflicts.
j. Compatibility problems.
k. Time schedules.
l. Weather limitations.
m. Manufacturer's written recommendations.
n. Warranty requirements.
o. Compatibility of materials.
p. Acceptability of substrates.
q. Temporary facilities and controls.
r. Space and access limitations.
s. Regulations of authorities having jurisdiction.
t. Testing and inspecting requirements.
u. Installation procedures.
v. Coordination with other work.
w. Required performance results.
x. Protection of adjacent work.
y. Protection of construction and personnel.

3. The Owner and/or Design Professional will use Contract Manager to record significant meeting discussions, agreements, and disagreements, including required corrective measures and actions.
4. Reporting: The Owner and/or Design Professional will distribute minutes of the meeting to each party present and to other parties requiring information.
5. Do not proceed with installation if the meeting cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the meeting at earliest feasible date.

E. Project Closeout Conference: The Owner may schedule and conduct a Project closeout conference, at a time convenient to the Owner and Design Professional, but no later than sixty (60) days prior to the scheduled inspection date for Substantial Completion.

1. The Owner will conduct the conference to review requirements and responsibilities related to the Project closeout.
2. Attendees: The Owner, Owner's Commissioning Authority, Design Professional, and their consultants; the Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the meeting. Participants at the meeting shall be familiar with the Project and authorized to make binding decisions on matters relating to the Work.
3. Agenda: Discuss items of significance that could affect or delay the Project closeout, including the following:

a. Submission of turnover documents.

b. Procedures required prior to inspection for Substantial Completion and for final inspection for acceptance.
c. Requirements for demonstration and training.
d. Preparation of Contractor's punch list.
e. Procedures for processing Applications for Payment at Substantial Completion and for final payment.
f. Coordination of separate contracts.
g. Owner's partial occupancy requirements.
h. Installation of Owner's furniture, fixtures, and equipment.
i. Responsibility for removing temporary facilities and controls.

4. Minutes: The Owner and/or Design Professional conducting meeting will use Contract Manager to record and distribute meeting minutes.

PART 2 - PRODUCTS (Not Used)
PART 3 - EXECUTION (Not Used)

END OF SECTION 013100

SECTION 013200 - PROJECT SCHEDULING AND PROGRESS DOCUMENTATION - MULTIPLE PRIME CONTRACTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The Contract Documents, including but not limited to, the Drawings and individual Specification Sections and Bid Milestone Schedule, apply to this Section.

1.2 SUMMARY

A. This is a Multiple Prime contract project therefore each Prime Contractor is responsible for the scheduling and documentation requirements as outlined in this Section 013200.

B. Section includes administrative and procedural requirements to plan, schedule and document the progress of construction during the performance of the Work, including the following:

1. Critical Path Method (CPM) schedule and reports.
2. Material location reports.
3. Field condition reports.`
4. Special reports.

C. Related Sections:

1. Section 011200 – Contract Summary of Work, for preparing a combined CPM Schedule.
2. Section 013300 – Submittal Procedure, for submitting schedules and reports.
3. Section 014000 – Quality and Code Requirements, for submitting a schedule of tests and inspections.

1.3 DEFINITIONS

A. Project: Work at the Site carried out pursuant to one or more Contracts.

B. Activity: A discrete part of the Contract that can be identified for planning, scheduling, monitoring, and controlling the Project. Activities included in a CPM schedule consume time and resources.

1. Critical Activity: An activity on the critical path that has no total float.
2. Predecessor Activity: An activity that precedes another activity in the network.
3. Successor Activity: An activity that follows another activity in the network.

C. Bid Milestone Schedule: Interim milestones, included in the Contract Documents, which the Contractor utilizes to formulate the Baseline Schedule.

D. Baseline Schedule: Initial schedule, prepared by each Contractor, to complete the Work of the Contract in accordance with the Contract duration and starting point to which schedule updates are compared.

E. CPM: Critical Path Method is a scheduling method used to plan and schedule construction projects where activities are arranged based on activity relationships creating a time scaled network diagram.

F. PDM: Precedence Diagram Method follows the standard CPM calculations and allows for special logic relationships creating an interdependent relationship throughout the network.

G. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no total float.

H. Data Date: The date when the status of the CPM schedule is determined, showing the calendar start date for the update period.

I. Float: The measure of leeway in starting and completing an activity.

1. Float time is not for the exclusive use or benefit of either the Owner or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Substantial Completion date.
2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the successor activity.
3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Substantial Completion date.

1.4 INFORMATIONAL SUBMITTALS

A. Format for Submittals: Submit required submittals in both electronic (PDF) file format and as electronic backup file in native software format.

B. CPM Schedule: Schedule, of size required to display entire schedule for entire construction period.

1. Submit a working electronic copy of schedule, using software indicated, and labeled to comply with requirements for submittals. Include type of schedule (baseline or updated) and date on label.

C. CPM Reports: Concurrent with CPM schedule, submit each of the following reports. Format for each activity in reports shall contain; activity ID number, activity description, original duration, remaining duration, actual duration, early and late start and finish dates and total float in calendar days.

1. Activity Report: List of all activities sorted by early or actual start date in each phase, area and level following the physical divisions of the Work.
2. Short Term Activity Report: Lists all activities occurring from the update data date in a two month forward and one month back window.

3. Logic Report: List of preceding and succeeding activities for all activities, sorted in ascending order by early or actual start date. Include activity ID number and float path(s).
4. Total Float Report: Provide a cumulative list of total float from each update period with comments associated to any and all variances.
5. Procurement Report: List all procurement activities sorted in order of the item being procured.
6. Narrative Report: The project scheduler shall describe the nature of the submission, interpretation of calculations, issues affecting progress and a milestone analysis comparing progress against the baseline and update schedules.

D. Material Location Reports: Submit at monthly intervals.

E. Field Condition Reports: Submit at time of discovery of differing conditions.

F. Special Reports: Submit at time of unusual event.

G. Qualification Data: For project scheduler.

1.5 QUALITY ASSURANCE

A. Project Scheduler Qualifications: An experienced specialist in CPM scheduling and reporting, with capability of producing CPM reports and diagrams within timeframes requested by the Owner. The project scheduler shall have or be able to obtain certification as a Planning and Scheduling Professional (PSP) or have a minimum of five years of demonstrated experience scheduling large capital projects.

B. Prescheduling Conference: The Owner may conduct conference at the Project site to comply with requirements in Section 013100 - Project Management and Coordination. Review methods and procedures related to the Baseline Schedule and the CPM schedule, including, but not limited to, the following:

1. Review software limitations and content and format for reports.
2. Verify availability of qualified personnel needed to develop and update schedule.
3. Discuss coordination, including phasing, work stages, area separations, interim milestones and Beneficial Occupancy.
4. Review delivery dates for Owner-furnished products.
5. Review schedule for work of Owner's separate contracts.
6. Review time required for review of submittals and resubmittals.
7. Review requirements for tests and inspections by independent testing and inspecting agencies.
8. Review time required for completion and startup procedures.
9. Review and finalize list of construction activities to be included in schedule.
10. Review submittal requirements and procedures.
11. Review procedures for updating schedule.

1.6 COORDINATION

A. Coordinate preparation and processing of CPM schedules and reports with the performance of the Work and with CPM scheduling and reporting of separate Contractors.

1. The General Construction Contractor (GC) shall coordinate new Baseline Schedules and CPM schedule updates with each prime contractor and provide a consolidated Baseline Schedule and consolidated CPM schedule updates to the Owner that include schedule input from the GC and each prime contractor. (Note: In cases where there is not a GC, substitute the pertinent trade contract above that will be responsible for the coordination of the schedule.)

B. Each contractor shall coordinate CPM schedules with the Contractor's Submission Schedule, progress reports, and other required schedules and reports.

1. Each contractor shall coordinate each construction activity in the network with other activities and schedule them in proper sequence.

PART 2 - PRODUCTS

2.1 CRITICAL PATH METHOD SCHEDULE, GENERAL

A. Bid Milestone Schedule: The Owner shall provide a Bid Milestone Schedule, which is attached to this section as a template for the Baseline Schedule. Nothing in the Bid Milestone Schedule, Baseline Schedule or CPM schedule shall preclude each Contractor from advancing the Work of the Contract.

1. Include milestones indicated in the Contract Documents in Baseline Schedule, including, but not limited to, the Notice to Proceed, interim milestones, Substantial Completion, and Contract close-out.
2. Substantial Completion date shall not be changed by submission of a schedule that shows an early completion date, unless approved by the Owner.
3. No time for weather will be apportioned for foreseeable occurrences in a specific regional area. Each Contractor shall be responsible to determine reasonable averages and make allowances in the performance of the Work.

B. Activities: Treat each numbered activity as a consumable resource for each principal element of the Work. Comply with the following:

1. Activity Duration: Define activities so no activity is longer than 15 days, unless specifically allowed by the Owner.
2. Procurement Activities: Include procurement process activities for long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
3. Submittal Review Time: Include review and resubmittal times indicated in Section 013300 - Submittal Procedures in schedule. Coordinate submittal review times in the CPM schedule with dates entered in the Contractor's Submission Schedule.

4. Startup and Testing Time: Include not less than 15 days for startup and testing.
5. Substantial Completion: Indicate completion on the date established for Substantial Completion, and allow time for the Owner's administrative procedures necessary to execute the Notice of Substantial Completion (NOSC).
6. Incomplete Work items and Contract Closeout: Include not more than 60 days for incomplete Work items and Contract Closeout Requirements.

C. Constraints: Include constraints and work restrictions indicated in the Contract Documents, or approved by the Owner prior to use and show how date constraints affect the sequence of the Work.

1. Construction Areas: Identify each major area of construction for each major portion of the Work. Indicate where each construction activity within a major area must be sequenced or integrated with other construction activities.

D. Upcoming Work Summary: Prepare summary report indicating activities scheduled to occur or commence prior to submittal of next schedule update. Summarize the following issues:

1. Unresolved issues.
2. Unanswered RFIs.
3. Rejected or unreturned submittals.
4. Notations on returned submittals.

E. Recovery CPM Schedule: When periodic update indicates the Work is 15 or more calendar days behind the current approved CPM schedule, submit a separate recovery CPM schedule indicating means by which each Contractor intends to regain compliance with the CPM schedule. Indicate changes to working hours, working days, crew sizes, and equipment required achieving compliance, and dating by which recovery will be accomplished, subject to Owner's approval.

F. Computer Scheduling Software: Prepare CPM schedules using current version of a program that has been developed specifically to manage CPM schedules and interface with the Owner's electronic file of the Bid Milestone Schedule.

1. Utilize Primavera P6 or P3 Primavera Project Planner operating system.

2.2 CRITICAL PATH METHOD SCHEDULE (CPM SCHEDULE)

A. Baseline Schedule: Prepare schedule using a time-scaled PDM network diagram representing the Work of the Contract. Total float time shall be equal to or greater than zero in the Baseline Schedule.

1. Within 15 days of the date established for the Notice to Proceed each contractor shall provide a baseline schedule to the GC. Outline significant construction activities for the first 90 days of construction. Include skeleton diagram for the remainder of the Work based on indicated activities.
2. Within 30 days following receipt of the last baseline schedule from each Contractor, the GC shall provide to the Owner a consolidated Baseline Schedule.

a. Failure to include any work item required for the performance of the Work shall not excuse each Contractor from completing the Work of the Contract within applicable completion dates, regardless of the Owner's approval of the schedule.

B. CPM Schedule: Prepare contemporaneous schedules using a time-scaled PDM network for sequencing the Work and showing the progress of the Work.

1. Establish procedures for monitoring and updating the CPM schedule and for reporting progress. Coordinate procedures with the progress meeting and payment request date.
2. Coordinate the Work occurring concurrently through the integration of other Contractors Baseline Schedules into the CPM schedule.
3. Conduct educational workshops to train and inform the Contractor's key Project personnel, including subcontractors' personnel, in proper methods of providing data and using CPM schedule information.
4. Use "one workday" as the unit of time for individual activities. Indicate nonworking days and holidays incorporated into the schedule in order to correlate with Contract durations.

C. CPM Schedule Preparation: Prepare a list of all activities required to complete the Work of the Contract. At minimum, each individual specification section, including General Requirement sections, as indicated in the Project Manual, shall be listed as an activity.

1. Activities ID: Provide a unique identifier to each activity. No activity ID shall be recycled or reused.
2. Activities: Indicate the estimated time duration, sequence requirements, and relationship of each activity in relation to other activities. Include estimated time frames for the following activities:

a. Preparation and processing of submittals.
b. Mobilization and demobilization.
c. Purchase of materials.
d. Delivery.
e. Fabrication.
f. Utility interruptions.
g. Installation.
h. Work by Owner that may affect or be affected by the Contractor's activities.
i. Testing and commissioning.
j. Incomplete Work items and Contract closeout.

3. Actual Activity Dates: Once an activity has been assigned an actual date of occurrence, the status of that activity shall not change. Any change to actual dates must be accompanied with supporting data and approved by the Owner. No actual start date shall occur ahead of the data date.
4. Critical Path Activities: Identify critical path activities, including those for interim completion dates. Scheduled start and completion dates shall be consistent with the Bid Milestone Schedule dates.
5. Processing: Process data to produce output data status on a computer-drawn, PDM network. Revise data, reorganize activity sequences, and reproduce as often as necessary to produce the CPM schedule within the limitations of the Contract duration.

6. Calculations: The schedule network shall be calculated allowing activities to retain their original logic. Progress override shall not be used when calculating the network status.
7. Logic: Leads and lags will not be used when the creation of an activity will perform the same function. Lag durations contained in the schedule shall not have negative value. Lead and lag durations shall not exceed the durations of the activity they are assigned.

    a. There shall be only two open ended activities; (1) Notice to Proceed, with no predecessor logic, and (2) Final Payment, with no successor logic. All intermediate activity logic shall be connected.
    b. Out of sequence activities that have progressed before all preceding logic will be allowed only on a case by case basis, as approved by the Owner. The Contractor shall propose logic corrections to eliminate all out of sequence progress and correct out of sequence progress that continues for more than two update cycles by logic revisions, as approved by the Owner.

8. Float: The Owner shall reject the schedule and schedule updates for the use of float suppression techniques such as preferential sequencing, special lead lags logic constraints, zero total or zero free float constraints, extended activity times, or imposing constraint dates other than what is required by the Contract.

    a. The use of resource leveling used for the purpose of artificially adjusting activity durations to consume float and influence the critical path is prohibited.
    b. A schedule showing work completing in less time than the Contract duration and accepted by the Owner, will be considered to have float.
    c. Any float generated during the performance of the Work, due to efficiencies of the Owner or any Contractor is not for sole use of the party generating the float.
    d. Negative float will not be a basis for requesting time extensions and will not be construed as a means of acceleration or schedule extension.

9. Format: Follow the applicable individual specification sections of the Work as the bases for the content of the CPM schedule. Organize the CPM schedule to provide the necessary detail for each area, level, quadrant and section as needed in the performance of the Work.

D. Changes in the Work: For each proposed change and concurrent with its submission, prepare a time-impact analysis using a network fragment to demonstrate the effect of the proposed change on the overall CPM schedule.

E. Schedule Updating: Concurrent with making revisions to schedule, prepare tabulated reports showing the following:

1. Identification of activities that have changed, including the reason each adjustment was necessary.
2. Changes in early and late finish dates.
3. Changes in activity durations in workdays.
4. Changes in the critical path.
5. Changes in total float or slack time.
6. Changes in the duration for Substantial Completion.

2.3 REPORTS

A. Material Location Reports: At monthly intervals, prepare and submit a comprehensive list of materials delivered to and stored at Project site. List shall be cumulative, showing materials previously reported plus items recently delivered. Include with list a statement of progress on and delivery dates for materials or items of equipment fabricated or stored away from Project site.

B. Field Condition Reports: Immediately on discovery of a difference between field conditions and the Contract Documents, prepare and submit a detailed report. Submit with a Request for Information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

2.4 SPECIAL REPORTS

A. General: Submit special reports directly to Owner within one day of an occurrence. Distribute copies of report to parties affected by the occurrence.

B. Reporting Unusual Events: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, and response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise the Owner in advance when these events are known or predictable.

PART 3 - EXECUTION

3.1 CPM SCHEDULE

A. Project Scheduler: Engage a consultant or person skilled in construction planning and scheduling to provide planning, scheduling, evaluation, and reporting services using CPM scheduling.

1. In-House Option: The Owner may waive the requirement to retain a consultant if Contractor employs skilled personnel with experience in CPM scheduling and reporting techniques. Submit qualifications.
2. Meetings: Project scheduler shall attend all meetings related to the Project progress, alleged delays, and time impact.

B. CPM Schedule and CPM Reports Updating: On a monthly basis the GC shall update the CPM schedule to reflect actual construction progress and activities. The GC shall coordinate with each prime contractor to obtain input from each prime contractor for each CPM schedule update. The GC shall issue schedule and reports one week before each regularly scheduled progress meeting.

1. The GC shall revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Each contractor shall provide input to the GC as necessary to accomplish said revisions. Issue updated schedule concurrently with the

CPM reports of each such meeting. As a minimum, schedule update submissions shall occur monthly and within 30 days of the schedule Data Date.

2. Include CPM reports with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
3. As the Work progresses, indicate final remaining duration for each activity.

C. Distribution: Submit one electronic copy, in format specified, to the Owner and distribute copies of approved schedule and reports to the Owner, Design Professional, separate contractors, testing and inspecting agencies, and other parties identified by the Owner with a need-to-know schedule responsibility.

1. Post copies in Project meeting rooms and temporary field offices.
2. When revisions are made, distribute updated schedules and reports to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

END OF SECTION 013200

SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The Contract Documents, including but not limited to, the Drawings and individual Specification Sections and Contractor's Submission Schedule, apply to this Section.

1.2 SUMMARY

A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

B. Related Sections:

1. Section 013200 – Construction Progress Documentation, for submitting schedules and reports, includes Contractor's construction schedule.
2. Section 017700 – Contract Closeout Requirements, for documents required to closeout contract.
3. Section 017823 – Operation and Maintenance Manuals, for submitting operation and maintenance manuals.

1.3 DEFINITIONS

A. Action Submittals: Written and graphic information and physical samples that require the Design Professional's responsive action. Action submittals are those submittals indicated in individual specification sections as action submittals.

B. Informational Submittals: Written and graphic information and physical samples that do not require the Design Professional's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual specification sections as informational submittals.

C. Portable Document Format (PDF): An open standard file format licensed by Adobe Systems used for representing documents in a device-independent and display resolution-independent fixed-layout document format.

D. Required Submittal List Utility application: Interacts with and to be used with the Owner's Contract Manager system. The Design Professional uses the utility to itemize the list of submission items needed to be submitted by the Contractor in order to insure the design intent will be satisfied and inclusive of all Project turnover documents and/or Contract Closeout Requirements.

E. Contractor's Submission Schedule: The itemized list of project submission requirements printed as a report from Contract Manager. The Contractor enters the date each item needs to be submitted in order to meet the CPM schedule and returns this document to the Owner.

1.4 ACTION SUBMITTALS

A. Submittal Schedule: The Contractor's Submission Schedule is attached to this section, prepared by the Design Professional. The Contractor is to coordinate and cooperate with the Owner and Design Professional to arrange in chronological order by dates required by the construction schedule. Coordinate time required for review, ordering, manufacturing, fabrication, and delivery to establish dates. Coordinate additional time required for making corrections or modifications to submittals noted by the Design Professional and additional time for handling and reviewing submittals required by those corrections.

1. Coordinate the Contractor's Submission Schedule with list of subcontracts, the schedule of values, and coordinated CPM schedule.
2. Initial Submittal: Submit in accordance with start-up CPM schedule. Include submittals required during the first 60 days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
3. Final Submittal: Submit concurrently in accordance with the complete CPM schedule.

    a. Coordinate with the Owner and Design Professional revised Contractor's Submission Schedule to reflect changes in current status and timing for submittals.

B. Format for Submittals: Submit required submittals in electronic (PDF) file format.

1.5 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

A. Design Professional's Digital Data Files: Electronic copies of CAD Drawings of the Contract Drawings will not be provided by the Design Professional for the Contractor's use in preparing submittals.

Coordination: Coordinate preparation and processing of submittals with the performance of the Work.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
2. Commissioning Authority will review submittals applicable to systems being commissioned for compliance with commissioning needs, concurrent with the Design Professional review and approval.
3. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
4. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.

5. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.

    a. Submit Operation and Maintenance Manuals concurrent with action submittal.
    b. The Owner or Design Professional reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

B. Processing Time: Allow time for submittal review, including time for re-submittals, as follows. Time for review shall commence on the Design Professional's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including re-submittals.

1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. The Design Professional will advise the Contractor when a submittal being processed must be delayed for coordination.
2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
3. Re-submittal Review: Allow 15 days for review of each re-submittal.
4. Sequential Review: Where sequential review of submittals by the Design Professional's consultants, the Owner, or other parties is indicated, allow 21 days for initial review of each submittal.

C. Identification and Information: Place a permanent label or title block on each paper copy submittal item for identification.

1. Indicate name of firm or entity that prepared each submittal on label or title block.
2. Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by the Design Professional.
3. Include the following information for processing and recording action taken:

    a. Project name.
    b. Date.
    c. Name of Design Professional.
    d. Name of Construction Manager (if applicable).
    e. Name of Contractor.
    f. Name of subcontractor.
    g. Name of supplier.
    h. Name of manufacturer.
    i. Submittal number including revision identifier.

        1) Submittal number shall be the submittal item number and Submittal Package number designated in the Contractor's Submission Schedule.

    j. Drawing number and detail references, as appropriate.
    k. Location(s) where product is to be installed, as appropriate.
    l. Other necessary identification.

D. Identification and Information: Identify and incorporate information in each electronic submittal file as follows:

1. Assemble complete submittal package into a single indexed file with links enabling navigation to each item.
2. Name file with submittal number or other unique identifier, including revision identifier.
3. Provide means for insertion to permanently record the Contractor's review and approval markings and action taken by the Design Professional.
4. Include the following information on an inserted cover sheet:

    a. Project name.
    b. Date.
    c. Name and address of Design Professional.
    d. Name of Construction Manager (if applicable).
    e. Name of Contractor.
    f. Name of firm or entity that prepared submittal.
    g. Name of subcontractor.
    h. Name of supplier.
    i. Name of manufacturer.
    j. Number and title of appropriate Specification Section.
    k. Drawing number and detail references, as appropriate.
    l. Location(s) where product is to be installed, as appropriate.
    m. Related physical samples submitted directly.
    n. Other necessary identification.

5. Include the following information as keywords in the electronic file metadata:

    a. Project name.
    b. Number and title of appropriate Specification Section.
    c. Manufacturer name.
    d. Product name.

E. Options: Identify options requiring selection by the Design Professional.

F. Deviations: Identify deviations from the Contract Documents on submittals.

G. Additional Copies: Unless the Design Professional observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.

H. Transmittal: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. The Design Professional will return submittals, without review**,** received from sources other than the Contractor.

1. Transmittal Form: Use the Contractor’s office form.
2. Transmittal Form: Provide locations on form for the following information:

    a. Project name.
    b. Date.
    c. Destination (To:).

d. Source (From:).
e. Names of subcontractor, manufacturer, and supplier.
f. Category and type of submittal.
g. Submittal purpose and description.
h. Specification Section number and title.
i. Indication of full or partial submittal.
j. Drawing number and detail references, as appropriate.
k. Transmittal numbered consecutively.
l. Submittal and transmittal distribution record.
m. Remarks.
n. Signature of transmitter.

3. On an attached separate sheet, prepared on the Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by the Design Professional on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same identification information as related submittal.

I. Re-submittals: Make re-submittals in same form and format.

1. Note date and content of previous submittal.
2. Note date and content of revision in label or title block and clearly indicate extent of revision.
3. Resubmit submittals until they are marked with approval notation from the Design Professional’s action stamp.

J. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, and installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

K. Use for Construction: Use only final submittals that are marked with approval notation from the Design Professional’s action stamp.

PART 2 - PRODUCTS

2.1 SUBMITTAL PROCEDURES

A. General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.

1. Submit electronic submittals via email as electronic (PDF) files, to the Design Professional. If applicable, the Design Professional will forward submittals to the Commissioning Authority for systems being commissioned. The Owner may request paper copies of certain submittals for onsite coordination.

a. The Design Professional, through the Owner, will return annotated file. Annotate and retain one copy of file as an electronic Project turnover document file.
b. The Commissioning Authority through the Design Professional will return annotated file.

2. Operation and Maintenance Manual Submittals: Submit concurrent with the Action Submittal, as related in individual Specification Sections.
3. Closeout Submittals: Comply with requirements specified in Section 017700 – Contract Closeout Requirements and as listed in the Contractor's Submission Schedule.
4. Permits, Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Permits, Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.

B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:

a. Submittal Package number and Submittal Item number.
b. Manufacturer's catalog cuts.
c. Manufacturer's product specifications.
d. Standard color charts.
e. Statement of compliance with specified referenced standards.
f. Testing by recognized testing agency.
g. Application of testing agency labels and seals.
h. Notation of coordination requirements.
i. Availability and delivery time information.

4. For equipment, include the following in addition to the above, as applicable:

a. Wiring diagrams showing factory-installed wiring.
b. Printed performance curves.
c. Operational range diagrams.
d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.

5. Submit Product Data concurrent with Samples.
6. Submit Product Data in electronic (PDF) file format.

C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.

1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:

a. Submittal Package number and Submittal Item number.
b. Identification of products.
c. Schedules.
d. Compliance with specified standards.
e. Notation of coordination requirements.
f. Notation of dimensions established by field measurement.
g. Relationship and attachment to adjoining construction clearly indicated.
h. Seal and signature of professional engineer if specified.

2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 30 by 42 inches.

D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.

1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
2. Identification: Attach label on unexposed side of Samples that includes the following:

a. Submittal Package number and Submittal Item number.
b. Generic description of Sample.
c. Product name and name of manufacturer.
d. Sample source.
e. Number and title of applicable Specification Section.

3. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.

a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
b. Samples not incorporated into the Work, or otherwise designated as the Owner's property, are the property of the Contractor.

4. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.

a. Number of Samples: For turnover purpose, submit six full sets of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. The Design Professional, through the Owner, will return submittal with options selected.

5. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or

containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

a. Number of Samples: Submit six sets of Samples. The Design Professional, through the Owner, will retain two Sample sets; remainder will be returned. Mark up and retain one returned Sample set as a turnover sample.

1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least six sets of paired units that show approximate limits of variations.

E. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:

1. Name, address, and telephone number of entity performing subcontract or supplying products.
2. Number and title of related Specification Section(s) covered by subcontract.
3. Drawing number and detail references, as appropriate, covered by subcontract.
4. Submit subcontract list in PDF electronic file, to the Owner.

F. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.

G. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on American Welding Society (AWS) forms. Include names of firms and personnel certified.

H. OSHA Certificates: Upon the Owner’s request, submit certificates of the OSHA 10-hour Construction Safety and Health Course – S1537-A, for all laborers, workers and mechanics working on site.

I. Installer Certificates: Upon the Owner’s request, submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.

J. Manufacturer Certificates: Upon the Owner’s request, submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.

K. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.

L. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.

M. Field Test Reports: Submit reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to the Design Professional.

B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of the Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 DESIGN PROFESSIONAL'S ACTION

A. General: The Design Professional will not review submittals that do not bear the Contractor's approval stamp and will return them without action.

B. Action Submittals: The Design Professional will review each submittal, make marks to indicate corrections or modifications required, and return it through the Owner. The Design Professional will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.

C. Informational Submittals: The Design Professional will review each submittal and will return it if it does not comply with requirements.

D. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from the Design Professional.

E. Incomplete submittals are not acceptable, will be considered nonresponsive, and will be returned without review.

F. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

G. On projects that have commissioning, the Commissioning Authority will receive copies of the submittals through the Design Professional and will provide comments on the submittals via the Design Professional.

3.3 CONTRACTOR'S SUBMITTAL SCHEDULE

A. The Contractor's Submission Schedule: The Contractor's Submission Schedule, prepared by the Design Professional is attached following the end of this section. The Contractor shall provide the dates each item needs to be submitted to the Owner no later than 30 days after approval of CPM schedule. The schedule shall include the date of all shop drawings, samples, materials that shall be submitted and the date approval is required. The Contractor shall adhere to the submittal processing time as describe in paragraph 1.5 above when developing the submittal schedule. The Contractor is to coordinate and cooperate with the Owner and Design Professional to complete scheduling in accordance with the approved CPM schedule.

END OF SECTION 013300

SECTION 014000 - QUALITY AND CODE REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The Contract Documents, including but not limited to, the Drawings and Individual Specification Sections and New York State (NYS)) Statement of Special Inspections and Tests, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for quality assurance and quality control.

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

1. Specific quality assurance and quality control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
2. Specified tests, inspections, and related actions do not limit the Contractor's other quality assurance and quality control procedures that facilitate compliance with the Contract Document requirements.
3. Requirements for the Contractor to provide quality assurance and quality control services required by the Owner or authorities having jurisdiction are not limited by provisions of this Section.

C. Related Sections:

1. .
2. Section 013200 - Construction Progress Documentation, for developing a schedule of required tests and inspections.
3. Individual Specification Sections, for specific inspections and tests requirements.

1.3 DEFINITIONS

A. Quality Assurance Services: Activities, actions, and procedures performed during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.

B. Quality Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements.

C. Mockups: Full size physical assemblies that are constructed on-site. Mockups are constructed to verify selections made under sample submittals; to demonstrate aesthetic effects and, where indicated, qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified installation tolerances. Mockups are not Samples. Approved mockups establish the standard by which the Work will be judged.

D. Product Testing: Tests and inspections that are performed by a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.

E. Field Quality Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.

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

G. Installer/Applicator/Erector: The Contractor or another entity engaged by the Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.

H. Experienced: When used with an entity or individual, "experienced" means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.4 ACTION SUBMITTALS

A. Shop Drawings: For mockups, provide plans, sections, and elevations, indicating materials and size of mockup construction.

1. Indicate manufacturer and model number of individual components.
2. Provide axonometric drawings for conditions difficult to illustrate in two dimensions.

1.5 INFORMATIONAL SUBMITTALS

A. Contractor's Quality Control Plan: For quality assurance and quality control activities and responsibilities.

B. Contractor's Quality Control Manager Qualifications: For supervisory personnel.

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

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

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

1.6 CONTRACTOR'S QUALITY CONTROL PLAN

A. Quality Control Plan, General: Submit quality control plan within 10 days of Notice to Proceed, and not less than five days prior to preconstruction conference. Submit in format acceptable to the Owner. Identify personnel, procedures, controls, instructions, tests, records, and forms to be used to carry out Contractor's quality assurance and quality control responsibilities. Coordinate with Contractor's construction schedule.

B. Quality Control Personnel Qualifications: Engage qualified full-time personnel trained and experienced in managing and executing quality assurance and quality control procedures similar in nature and extent to those required for Project.

1. Project quality control manager may also serve as Project superintendent.

C. Submittal Procedure: Describe procedures for ensuring compliance with requirements through review and management of submittal process. Indicate qualifications of personnel responsible for submittal review.

D. Testing and Inspection: Include in quality control plan a comprehensive schedule of the Work requiring tests or inspections, including the following:

1. The Contractor-performed tests and inspections including subcontractor-performed tests and inspections. Include required tests and inspections and the Contractor-elected tests and inspections.
2. Special inspections required by authorities having jurisdiction and indicated on the "NYS or NYC Statement of Special Inspections and Tests."

E. Continuous Inspection of Workmanship: Describe process for continuous inspection during construction to identify and correct deficiencies in workmanship in addition to testing and inspection specified. Indicate types of corrective actions to be required to bring work into compliance with standards of workmanship established by Contract requirements and approved mockups.

F. Monitoring and Documentation: Maintain testing and inspection reports including log of approved and rejected results. Include work the Owner has indicated as nonconforming or defective. Indicate corrective actions taken to bring nonconforming work into compliance with requirements. Comply with requirements of authorities having jurisdiction.

1.7 REPORTS AND DOCUMENTS

A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:

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

B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:

1. Name, address, and telephone number of technical representative making report.
2. Statement on condition of substrates and their acceptability for installation of product.
3. Statement that products at Project site comply with requirements.
4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
6. Statement whether conditions, products, and installation will affect warranty.
7. Other required items indicated in individual Specification Sections.

C. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:

1. Name, address, and telephone number of factory-authorized service representative making report.
2. Statement that equipment complies with requirements.

3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
4. Statement whether conditions, products, and installation will affect warranty.
5. Other required items indicated in individual Specification Sections.

1.8 PERMITS, LICENSES, AND CERTIFICATES:

A. The Contractor shall obtain, maintain and pay for all applications, permits, filings, and licenses necessary for the execution of the Work and for the use of such Work when completed as required by any and all authorities having jurisdiction. The Contractor shall comply with and give notices required by laws, ordinances, rules, regulations and lawful orders of authorities having jurisdiction bearing on performance of the Work.

B. The Contractor shall promptly assist the Owner in securing all approvals from authorities having jurisdiction. Without limitation, the Contractor shall assist the Owner in making application for Project approval, variances or other approvals, Letters of Completion, Temporary Certificates of Occupancy, and Certificates of Occupancy, including completion of all necessary applications and supporting documentation.

C. The Contractor shall comply with all regulations governing conduct, access to the premises, operation of equipment and systems and conduct while in or near the premises and shall perform the Work in such a manner as not to unreasonably interrupt or interfere with the conduct of business of the Institution.

D. For the Owner's records, submit copies of permits, licenses, certifications, inspection reports, material certificates/affidavits, approvals, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

E. Dormitory Authority Permits: Prior to commencement of the Work, the Dormitory Authority shall provide the Contractor, at no costs, a Construction Permit for performance of the Work and post a copy at the Project site.

1. The Contractor shall secure and pay for all other work permits, applications, filings, and approvals that are associated with the Work of the Contract and pay all other permits, fees, licenses and inspections necessary for the proper execution and completion of the Contract as required by all other applicable authorities having jurisdiction.
2. .

F. Municipal Permits: The Contractor shall secure and pay for a building permit and all work permits, applications, filings, and approvals that are associated with the Work of the Contract and pay all other permits, fees, licenses and inspections necessary for the proper execution and completion of the Contract as required by applicable authorities having jurisdiction.

1. The Contractor shall secure required building permit or work permits and approvals prior to commencement of the Work, provide a copy to the Owner and post a copy of the permit at the Project site.
2. The Contractor shall be responsible to maintain updated permits and approvals.

3. Upon Substantial Completion of the Work of the Contract, the Contractor shall secure all required approvals from applicable authorities having jurisdiction. The Contractor shall provide a copy to the Owner.

1.9 QUALITY ASSURANCE

A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.

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

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

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

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

F. Testing Agency Qualifications: An independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 329**,** and with additional qualifications specified in individual Sections; and where required by authorities having jurisdiction, that is acceptable to authorities.

G. Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

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

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

1. Build mockups in location and of size indicated or, if not indicated, as directed by the Owner.
2. Notify the Owner seven days in advance of dates and times when mockups will be constructed.

3. Employ supervisory personnel who will oversee mockup construction. Employ workers that will be employed during the construction at the Project.
4. Demonstrate the proposed range of aesthetic effects and workmanship.
5. Obtain the Owner’s approval of mockups before starting work, fabrication, or construction.

    a. Allow seven days for initial review and each re-review of each mockup.

6. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
7. Demolish and remove mockups when directed by the Owner.

1.10 QUALITY CONTROL

A. Owner Responsibilities: Where quality control services are indicated as the Owner's responsibility, the Owner will engage a qualified testing agency to perform these services.

1. The Owner will furnish the Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.

B. Contractor Responsibilities: Tests and inspections not explicitly assigned to the Owner are the Contractor's responsibility. Perform additional quality control activities required to verify that the Work complies with requirements, whether specified or not.

1. Unless otherwise indicated, provide quality control services specified and those required by authorities having jurisdiction. Perform quality control services required of the Contractor by authorities having jurisdiction, whether specified or not.
2. Where services are indicated as the Contractor's responsibility, engage a qualified testing agency to perform these quality control services.

    a. Contractor shall not employ same entity engaged by the Owner, unless agreed to in writing by the Owner.

3. Notify testing agencies at least 24 hours in advance of time (excluding weekends and holidays) when Work that requires testing or inspecting will be performed.
4. Where quality control services are indicated as the Contractor's responsibility, submit a written report, in duplicate, of each quality control service.
5. Testing and inspecting requested by the Contractor and not required by the Contract Documents are the Contractor's responsibility.
6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

C. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Section 013300 - Submittal Procedures.

D. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.

E. Retesting/Reinspecting:

1. Regardless of whether original tests or inspections were the Contractor's responsibility, provide quality control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
2. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents, or costs attributable to the Contractor’s lack of coordination in properly scheduling the Work requiring testing and inspection will be charged to Contractor and the Contract Sum will be adjusted by Change Order.

F. Testing Agency Responsibilities: Cooperate with the Owner and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.

1. Notify the Owner and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
4. Submit a written report, in duplicate, of each test, inspection, and similar quality control service through Contractor.
5. Does not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
6. Do not perform any duties of the Contractor.

G. Associated Services: The Contractor shall cooperate with agencies performing required tests, inspections, and similar quality control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. The Contractor shall provide the following:

1. Access to the Work, including equipment required to access the Work.
2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
4. Facilities for storage and field curing of test samples.
5. Delivery of samples to testing agencies.
6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
7. Security and protection for samples and for testing and inspecting equipment at Project site.

H. Coordination: Coordinate sequence of activities to accommodate required quality assurance and quality control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.

1. Schedule times for tests, inspections, obtaining samples, and similar activities.

I. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality control services required by the Contract Documents. Coordinate and submit concurrently with Contractor's construction schedule. Update as the Work progresses.

1. Distribution: Distribute schedule to the Owner, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

1.11 NYS | SPECIAL INSPECTIONS AND TESTS

A. Special Inspections and Tests: The Owner will engage a qualified testing agency to conduct special inspections and tests required by authorities having jurisdiction as the responsibility of the Owner, as indicated in the NYS | Statement of Special Inspections and Tests, attached to this Section, and as follows:

1. Notifying Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
2. Submitting a written report of each test, inspection, and similar quality control service to the Owner with copy to the Contractor and to authorities having jurisdiction. Frequency of reporting shall be determined in consultation with the Owner.
3. Submitting a final report of special tests and inspections at Substantial Completion, this includes a list of unresolved deficiencies.
4. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents or code requirements.
5. Retesting and reinspecting corrected work.

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

1. Specified tests, inspections, and related actions do not limit Contractor's quality control procedures that facilitate compliance with the Contract Document requirements.
2. Inspections and tests performed by the testing agency shall in no way relieve the Contractor of the responsibility to construct in accordance with the Contract Documents.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

A. Prepare a record of tests and inspections. Include the following:

1. Date test or inspection was conducted.
2. Description of the Work tested or inspected.
3. Date test or inspection results were transmitted to the Design Professional.
4. Identification of testing agency or special inspector conducting test or inspection.

B. Maintain log at Project site. Post changes and modifications as they occur. Provide access to test and inspection log for the Owner’s reference during normal working hours.

3.2 REPAIR AND PROTECTION

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

B. Protect construction exposed by or for quality control service activities.

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

END OF SECTION 014000

2016 NYS BUILDING CODE
STATEMENT OF SPECIAL INSPECTIONS

BCNYS §1704.3 requires that the project Registered Design Professional in responsible charge prepare a Statement of Special Inspections. Completion of this Statement of Special Inspections and submission to the Code Compliance Unit with the Construction Permit Application is a condition for issuance of the Construction Permit.

Campus/Facility: Rockland Psychiatric Center		
Project Title: BUILDING 1 - Renovation and Abatement Project		
Project #: 3536309999	**DASNY Project Manager:** Jeffrey Dyer	
Registered Design Professional (RDP): F. Eric Goshow		
Name of Person Completing Statement: T. McMahon	**Phone:** 9172681382	**Date:** 3-25-22
Comments: prepared with Structural consultant		

INSPECTIONS AND TESTS (Continuous & Periodic is as defined by the BCNYS)	CONTINUOUS	PERIODIC	BCNYS REFERENCE	CHECK IF REQUIRED	SPECIFICATION REFERENCE AND CLARIFYING NOTES (by RDP)[1]	COMMENTARY/NOTES and REFERENCE STANDARDS (by DASNY)[2]
A. Special Cases (Add requirements under Part S as necessary)			1705.1.1			Special Inspections and Tests shall be required for proposed work that is, in the opinion of the building official, unusual in its nature.
B. Steel Construction.			1705.2			
1. Structural Steel			1705.2.1			
a. Inspection tasks prior to welding;			1705.2.1			AISC 360 Table N5.4-1
i. Welding procedure specifications (WPSs) available	X		1705.2.1	☒		AISC 360 Table N5.4-1
ii. Manufacturer certifications for welding consumables available	X		1705.2.1	☒		AISC 360 Table N5.4-1
iii. Material identification (type/grade)		X	1705.2.1	☒		AISC 360 Table N5.4-1
iv. Welder identification system		X	1705.2.1	☒		AISC 360 Table N5.4-1 The fabricator or erector, as applicable, shall maintain a system by which a welder who has welded a joint or member can be identified. Stamps, if used, shall be the low-stress type.
v. Fit up of groove welds (including joint geometry)		X	1705.2.1	☐		AISC 360 Table N5.4-1

INSPECTIONS AND TESTS (Continuous & Periodic is as defined by the BCNYS)	CONTINUOUS	PERIODIC	BCNYS REFERENCE	CHECK IF REQUIRED	SPECIFICATION REFERENCE AND CLARIFYING NOTES (by RDP)[1]	COMMENTARY/NOTES and REFERENCE STANDARDS (by DASNY)[2]
vi. Configuration and finish of access holes		X	1705.2.1	☒		AISC 360 Table N5.4-1
vii. Fit-up of fillet welds		X	1705.2.1	☒		AISC 360 Table N5.4-1
viii. Check Welding equipment		X	1705.2.1	☒		AISC 360 Table N5.4-1
b. Inspection Tasks During Welding			1705.2.1			AISC 360 Table N5.4-2
i. Use of qualified welders.		X	1705.2.1	☒		AISC 360 Table N5.4-2
ii. Control and Handling of welding consumables.		X	1705.2.1	☒		AISC 360 Table N5.4-2
iii. No welding over cracked tack welds.		X	1705.2.1	☒		AISC 360 Table N5.4-2
iv. Environmental Conditions		X	1705.2.1	☒		AISC 360 Table N5.4-2
v. Verify WPS followed		X	1705.2.1	☒		AISC 360 Table N5.4-2
vi. Verify Welding Techniques		X	1705.2.1	☒		AISC 360 Table N5.4-2
c. Inspection Tasks after Welding			1705.2.1			AISC 360 Table N5.4-3
i. Welds cleaned		X	1705.2.1	☒		AISC 360 Table N5.4-3
ii. Size, length, and location of welds	X		1705.2.1	☒		AISC 360 Table N5.4-3
iii. Welds meet visual acceptance criteria	X		1705.2.1	☒		AISC 360 Table N5.4-3
iv. Arc strikes	X		1705.2.1	☒		AISC 360 Table N5.4-3
v. K-area			1705.2.1	☒		AISC 360 Table N5.4-3; When welding of doubler plates, continuity plates or stiffeners has been performed in the k-area, visually inspect the web k-area for cracks within 3 in. (75mm) of the weld.
vi. Backing removed and weld tabs removed (if required)	X		1705.2.1	☒		AISC 360 Table N5.4-3
vii. Repair activities	X		1705.2.1	☒		AISC 360 Table N5.4-3
viii. Document acceptance or rejection of welded joint or member	X		1705.2.1	☒		AISC 360 Table N5.4-3
d. Inspection Tasks Prior to Bolting			1705.2.1			AISC 360 Table N5.6-1
i. Manufacturer's certification available for fastener materials	X		1705.2.1	☒		AISC 360 Table N5.6-1
ii. Fasteners marked in accordance with ASTM requirements		X	1705.2.1	☒		AISC 360 Table N5.6-1
iii. Proper fasteners selected		X	1705.2.1	☒		AISC 360 Table N5.6-1

INSPECTIONS AND TESTS (Continuous & Periodic is as defined by the BCNYS)	CONTINUOUS	PERIODIC	BCNYS REFERENCE	CHECK IF REQUIRED	SPECIFICATION REFERENCE AND CLARIFYING NOTES (by RDP)[1]	COMMENTARY/NOTES and REFERENCE STANDARDS (by DASNY)[2]
for the joint detail (grade, type, bolt length if threads are to be excluded from shear plane)						
iv. Proper bolting procedure selected for joint detail		X	1705.2.1	☒		AISC 360 Table N5.6-1
v. Connecting elements, including the appropriate faying surface condition and hole preparation, if specified, meet applicable requirements.		X	1705.2.1	☒		AISC 360 Table N5.6-1
vi. Pre-installation verification testing by installation personnel observed and documented for fastener assemblies and methods used.		X	1705.2.1	☒		AISC 360 Table N5.6-1
vii. Proper storage provided for bolts, nuts, washers and other fastener components.		X	1705.2.1	☒		AISC 360 Table N5.6-1
e. Inspection Tasks During Bolting			1705.2.1			AISC 360 Table N5.6-2
i. Fastener assemblies, of suitable condition, placed in all holes and washers (if required) are positioned as required.		X	1705.2.1	☒		AISC 360 Table N5.6-2
ii. Joint brought to the snug-tight condition prior to the pretensioning operation.		X	1705.2.1	☒		AISC 360 Table N5.6-2
iii. Fastener component not turned by the wrench prevented from rotating.		X	1705.2.1	☒		AISC 360 Table N5.6-2
iv. Fasteners are pretensioned in accordance with the RCSC Specification, progressing systematically from the most rigid point toward the free edges.		X	1705.2.1	☒		AISC 360 Table N5.6-2
f. Inspection Tasks After Bolting			1705.2.1			AISC 360 Table N5.6-3
i. Document acceptance or rejection of bolted connections.	X		1705.2.1	☒		AISC 360 Table N5.6-3
g. Inspection of Steel Elements of Composite Construction Prior to Concrete Placement			1705.2.1			AISC 360 Table N6.1
i. Placement and installation	X		1705.2.1	☒		AISC 360 Table N6.1

INSPECTIONS AND TESTS (Continuous & Periodic is as defined by the BCNYS)	CONTINUOUS	PERIODIC	BCNYS REFERENCE	CHECK IF REQUIRED	SPECIFICATION REFERENCE AND CLARIFYING NOTES (by RDP)[1]	COMMENTARY/NOTES and REFERENCE STANDARDS (by DASNY)[2]
of steel deck.						
ii. Placement and installation of steel headed stud anchors.	X		1705.2.1	☐		AISC 360 Table N6.1
iii. Document acceptance or rejection of steel elements	X		1705.2.1	☒		AISC 360 Table N6.1
2. Cold-Formed Steel Deck			1705.2.2	☐		
a. Inspection or Execution Tasks prior to Deck Placement			1705.2.2			SDI QA/QC Table 1.1
i. Verify compliance of materials (deck and all deck accessories) with construction documents, including profiles, material properties, and base metal thickness.	X		1705.2.2	☐		SDI QA/QC Table 1.1
ii. Document acceptance or rejection of deck and deck accessories.	X		1705.2.2	☐		SDI QA/QC Table 1.1
b. Inspection or Execution Tasks after Deck Placement						SDI QA/QC Table 1.2
i. Verify compliance of deck and all deck accessories installation with construction documents.	X		1705.2.2	☒		SDI QA/QC Table 1.2
ii. Verify deck materials are represented by the mill certifications that comply with the construction documents.	X		1705.2.2	☒		SDI QA/QC Table 1.2
iii. Document acceptance or rejection of installation of deck and deck accessories.	X		1705.2.2	☒		SDI QA/QC Table 1.2
c. Inspection or Execution Tasks Prior to Welding			1705.2.2			SDI QA/QC Table 1.3
i. Welding Procedure Specifications (WPS) available.		X	1705.2.2	☒		SDI QA/QC Table 1.3
ii. Manufacturer certifications for welding consumables available		X	1705.2.2	☒		SDI QA/QC Table 1.3
iii. Material identification (type/grade).		X	1705.2.2	☒		SDI QA/QC Table 1.3
iv. Check welding equipment.		X	1705.2.2	☒		SDI QA/QC Table 1.3
d. Inspection or Execution Tasks during Welding			1705.2.2			SDI QA/QC Table 1.4
i. Use of qualified welders.		X	1705.2.2	☒		SDI QA/QC Table 1.4
ii. Control and handling of		X	1705.2.2	☒		SDI QA/QC Table 1.4

INSPECTIONS AND TESTS (Continuous & Periodic is as defined by the BCNYS)	CONTINUOUS	PERIODIC	BCNYS REFERENCE	CHECK IF REQUIRED	SPECIFICATION REFERENCE AND CLARIFYING NOTES (by RDP)[1]	COMMENTARY/NOTES and REFERENCE STANDARDS (by DASNY)[2]
welding consumables.						
iii. Environmental conditions (wind speed, moisture, temperature).		X	1705.2.2	☒		SDI QA/QC Table 1.4
iv. Verify WPS followed.		X	1705.2.2	☒		SDI QA/QC Table 1.4
e. Inspection or Execution Tasks after Welding			1705.2.2			SDI QA/QC Table 1.5
i. Verify size and location of welds, including support, sidelap, and perimeter welds.	X		1705.2.2	☒		SDI QA/QC Table 1.5
ii. Welds meet visual acceptance criteria.	X		1705.2.2	☒		SDI QA/QC Table 1.5
iii. Verify repair activities.	X		1705.2.2	☒		SDI QA/QC Table 1.5
iv. Document acceptance or rejection of welds.	X		1705.2.2	☐		SDI QA/QC Table 1.5
f. Inspection or Execution Tasks prior to Mechanical Fastening			1705.2.2			SDI QA/QC Table 1.6
i. Manufacturer installation instructions available for mechanical fasteners.		X	1705.2.2	☐		SDI QA/QC Table 1.6
ii. Proper tools available for fastener installation.		X	1705.2.2	☐		SDI QA/QC Table 1.6
iii. Proper storage for mechanical fasteners.		X	1705.2.2	☐		SDI QA/QC Table 1.6
g. Inspection or Execution Tasks during Mechanical Fastening			1705.2.2			SDI QA/QC Table 1.7
i. Fasteners are positioned as required.		X	1705.2.2	☐		SDI QA/QC Table 1.7
ii. Fasteners are installed in accordance with manufacturer's instructions.		X	1705.2.2	☐		SDI QA/QC Table 1.7
h. Inspection or Execution Tasks after Mechanical Fastening			1705.2.2			SDI QA/QC Table 1.8
i. Check spacing, type, and installation of support fasteners.	X		1705.2.2	☐		SDI QA/QC Table 1.8
ii. Check spacing, type, and installation of sidelap fasteners.	X		1705.2.2	☐		SDI QA/QC Table 1.8
iii. Check spacing, type, and installation of perimeter fasteners.	X		1705.2.2	☐		SDI QA/QC Table 1.8
iv. Verify repair activities.	X		1705.2.2	☐		SDI QA/QC Table 1.8
v. Document acceptance or rejection of mechanical fasteners.	X		1705.2.2	☐		SDI QA/QC Table 1.8

INSPECTIONS AND TESTS (Continuous & Periodic is as defined by the BCNYS)	CONTINUOUS	PERIODIC	BCNYS REFERENCE	CHECK IF REQUIRED	SPECIFICATION REFERENCE AND CLARIFYING NOTES (by RDP)[1]	COMMENTARY/NOTES and REFERENCE STANDARDS (by DASNY)[2]
3. Open-Web Steel Joists and Joist Girders			1705.2.3			
a. Installation of open-web steel joists and joist girders			Table 1705.2.3	☐		
i. End connections – welded or bolted.		X	Table 1705.2.3	☒		SJI Specifications listed in Section 2207.1.
ii. Bridging – Horizontal or diagonal.			Table 1705.2.3			
a. Standard bridging.		X	Table 1705.2.3	☐		SJI Specifications listed in Section 2207.1.
b. Bridging that differs from the SJI specifications listed in Section 2207.1		X	Table 1705.2.3	☐		
4. Cold-Formed Steel Trusses spanning 60 feet or Greater		X	1705.2.4	☐		The Special Inspector shall verify that the temporary restraint/bracing and the permanent individual truss member restraint/bracing are installed in accordance with the approved truss submittal package.
C. Concrete Construction			1705.3			
1. Inspect reinforcement, including prestressing tendons, and verify placement.		X	Table 1705.3	☒		ACI 318 Ch. 20, 25.2, 25.3, 26.6.1-26.6.3 IBC 1908.4
2 Reinforcing Bar Welding:			Table 1705.3 1705.3.1			AWS D1.4, ACI 318: 26.6.4
a. Verify weldability of reinforcing bars other than ASTM A706:		X	Table 1705.3	☐		AWS D1.4 ACI 318: 26.6.4
b. Inspect single pass fillet welds, maximum 5/16"; and		X	Table 1705.3	☐		AWS D1.4 ACI 318: 26.6.4
c. Inspect all other welds	X		Table 1705.3	☐		AWS D1.4 ACI 318: 26.6.4
3. Inspect anchors cast in concrete.		X	Table 1705.3	☐		ACI 318: 17.8.2
4. Inspect anchors post-installed in hardened concrete members.		X	Table 1705.3	☒		
a. Adhesive anchors installed in horizontally or upwardly inclined orientations to resist sustained tension loads.	X		Table 1705.3	☒		ACI 318: 17.8.2.4
b. Mechanical anchors and adhesive anchors not defined in item 4a.		X	Table 1705.3	☐		ACI 318: 17.8.2

INSPECTIONS AND TESTS (Continuous & Periodic is as defined by the BCNYS)	CONTINUOUS	PERIODIC	BCNYS REFERENCE	CHECK IF REQUIRED	SPECIFICATION REFERENCE AND CLARIFYING NOTES (by RDP)[1]	COMMENTARY/NOTES and REFERENCE STANDARDS (by DASNY)[2]
5. Verify use of required design mix		X	Table 1705.3	☒		ACI 318: Ch. 19, 26.4.3, 26.4.4 IBC 1904.1, 1904.2, 1908.2, 1908.3
6. Prior to concrete placement, fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of concrete.	X		Table 1705.3	☒		ASTM C172, ASTM C31; ACI 318: 26.4, 26.12; IBC 1908.10
7. Inspect concrete and shotcrete placement for proper application techniques.	X		Table 1705.3	☒		ACI 318: 26.5; IBC 1908.6, 1908.7, 1908.8
8. Verify maintenance of specified curing temperature and techniques.		X	Table 1705.3	☒		ACI 318: 26.5.3-26.5.5 IBC: 1908.9
9. Inspect Prestressed concrete for:			Table 1705.3	☐		
a. Application of prestressing forces; and	X		Table 1705.3	☐		ACI 318: 26.10
b. Grouting of bonded prestressing tendons	X		Table 1705.3	☐		ACI 318: 26.10
10. Inspect erection of precast concrete members		X	Table 1705.3	☐		ACI 318: Ch. 26.8
11. Verify in-situ concrete strength, prior to stressing tendons in post-tensioned concrete and prior to removal of shores and forms from beams and structural slabs.		X	Table 1705.3	☐		ACI 318: 26.11.2
12. Inspect formwork for shape, location and dimensions of the concrete member being formed.		X	Table 1705.3	☒		
D. Masonry Construction (Check LA, LB or LC below) ☐ LA = Level A Quality Assurance ☐ LB = Level B Quality Assurance ☐ LC = Level C Quality Assurance			1705.4			TMS 402/ACI530/ASCE5 TMS 602/ACI530.1/ASCE6
Level A Quality Assurance: Minimum Verification						
A1. Prior to construction,		X		☐		TMS 402/ACI530/ASCE5

INSPECTIONS AND TESTS (Continuous & Periodic is as defined by the BCNYS)	CONTINUOUS	PERIODIC	BCNYS REFERENCE	CHECK IF REQUIRED	SPECIFICATION REFERENCE AND CLARIFYING NOTES (by RDP)[1]	COMMENTARY/NOTES and REFERENCE STANDARDS (by DASNY)[2]
verify certificates of compliance used in masonry construction.						Table 3.1.1
Level B Quality Assurance: Minimum Special Inspections						
B1. Verify Compliance with approved submittals.		X		☐		TMS 402/ACI530/ASCE5 Table 3.1.2
B2: As masonry construction begins, verify that the following are in compliance:				☐		TMS 402/ACI530/ASCE5 Table 3.1.2
B2a: Proportions of site-prepared mortar.		X		☐		TMS 402/ACI530/ASCE5 Table 3.1.2
B2b: Construction of Mortar Joints.		X		☐		TMS 402/ACI530/ASCE5 Table 3.1.2
B2c: Grade and size of prestressing tendons and anchorage.		X		☐		TMS 402/ACI530/ASCE5 Table 3.1.2
B2d: Location of reinforcement, connectors, and prestressing tendons and anchorage.		X		☐		TMS 402/ACI530/ASCE5 Table 3.1.2
B2e: Prestressing technique.		X		☐		TMS 402/ACI530/ASCE5 Table 3.1.2
B2f: Properties of thin bed mortar for AAC masonry.	X	X		☐		TMS 402/ACI530/ASCE5 Table 3.1.2 Continuous inspection required for the first 5000sf of AAC Masonry, Periodic inspection is required after the first 5000sf of AAC masonry.
B3. Prior to grouting, verify that the following are in compliance:		X		☐		TMS 402/ACI530/ASCE5 Table 3.1.2
B3a: Grout space.		X		☐		TMS 402/ACI530/ASCE5 Table 3.1.2
B3b: Grade, type, and size of reinforcement and anchor bolts, and prestressing tendons and anchorage.		X		☐		TMS 402/ACI530/ASCE5 Table 3.1.2
B3c: Placement of reinforcement, connectors, and prestressing tendons and anchorage.		X		☐		TMS 402/ACI530/ASCE5 Table 3.1.2
B3d: Proportions of site-prepared grout for bonded tendons.		X		☐		TMS 402/ACI530/ASCE5 Table 3.1.2
B3e: Construction of mortar joints.		X		☐		TMS 402/ACI530/ASCE5 Table 3.1.2
B4: Verify during		X		☐		TMS 402/ACI530/ASCE5

INSPECTIONS AND TESTS (Continuous & Periodic is as defined by the BCNYS)	CONTINUOUS	PERIODIC	BCNYS REFERENCE	CHECK IF REQUIRED	SPECIFICATION REFERENCE AND CLARIFYING NOTES (by RDP)[1]	COMMENTARY/NOTES and REFERENCE STANDARDS (by DASNY)[2]
construction:						Table 3.1.2
B4a: Size and location of structural elements.		X		☐		TMS 402/ACI530/ASCE5 Table 3.1.2
B4b: Type, size and location of anchors, including other details of anchorage of masonry to structural members, frames, or other construction.		X		☐		TMS 402/ACI530/ASCE5 Table 3.1.2
B4c: Welding of reinforcement.	X			☐		TMS 402/ACI530/ASCE5 Table 3.1.2
B4d: Preparation, construction, and protection of masonry during cold weather (temperature below 40dF) or hot weather (temperature above 90dF)		X		☐		TMS 402/ACI530/ASCE5 Table 3.1.2
B4e: Application and measurement of prestressing force.	X			☐		TMS 402/ACI530/ASCE5 Table 3.1.2
B4f: Placement of grout and prestressing grout for bonded tendons is in compliance.	X			☐		TMS 402/ACI530/ASCE5 Table 3.1.2
B4g: Placement of AAC masonry units and construction of thin-bed mortar joints.	X	X		☐		TMS 402/ACI530/ASCE5 Table 3.1.2 Continuous inspection required for the first 5000sf of AAC Masonry, Periodic inspection is required after the first 5000sf of AAC masonry.
B5: Observe preparation of grout specimens, mortar specimens, and/or prisms.		X		☐		TMS 402/ACI530/ASCE5 Table 3.1.2
Minimum Tests						
B6: Verification of Slump flow and Visual Stability Index (VSI) as delivered to the project site in accordance with Specification Article 1.5B1.b.3 for self-consolidating grout.				☐		TMS 402/ACI530/ASCE5 Table 3.1.2
B7: Verification of f'm and f'aac in accordance with Specification Article 1.4B prior to construction, except where specifically exempted by this Code.				☐		TMS 402/ACI530/ASCE5 Table 3.1.2
Level C Quality Assurance: Minimum Special Inspections						

INSPECTIONS AND TESTS (Continuous & Periodic is as defined by the BCNYS)	CONTINUOUS	PERIODIC	BCNYS REFERENCE	CHECK IF REQUIRED	SPECIFICATION REFERENCE AND CLARIFYING NOTES (by RDP)[1]	COMMENTARY/NOTES and REFERENCE STANDARDS (by DASNY)[2]
C1. Verify compliance with the approved submittals.		X		☐		TMS 402/ACI530/ASCE5 Table 3.1.3
C2. Verify that the following are in compliance:				☐		TMS 402/ACI530/ASCE5 Table 3.1.3
C2a. Proportions of site mixed mortar, grout and prestressing grout for bonded tendons.		X		☐		TMS 402/ACI530/ASCE5 Table 3.1.3
C2b. Grade, type, and size of reinforcement and anchor bolts, and prestressing tendons and anchorages.		X		☐		TMS 402/ACI530/ASCE5 Table 3.1.3
C2c. Placement of masonry units and construction of mortar joints.		X		☐		TMS 402/ACI530/ASCE5 Table 3.1.3
C2d. Placement of reinforcement, connectors, and prestressing tendons and anchorages.	X			☐		TMS 402/ACI530/ASCE5 Table 3.1.3
C2e. Grout spacing prior to grouting.	X			☐		TMS 402/ACI530/ASCE5 Table 3.1.3
C2f. Placement of grout and prestressing grout for bonded tendons.	X			☐		TMS 402/ACI530/ASCE5 Table 3.1.3
C2g. Size and location of structural elements.		X		☐		TMS 402/ACI530/ASCE5 Table 3.1.3
C2h. Type, size, and location of anchors including other details of anchorage of masonry to structural members, frames, or other construction.	X			☐		TMS 402/ACI530/ASCE5 Table 3.1.3
C2i. Welding of reinforcement.	X			☐		TMS 402/ACI530/ASCE5 Table 3.1.3
C2j. Preparation, construction, and protection of masonry during cold weather (temperature below 40dF) or hot weather (temperature above 90dF).		X		☐		TMS 402/ACI530/ASCE5 Table 3.1.3
C2k. Application and measurement of prestressing force.	X			☐		TMS 402/ACI530/ASCE5 Table 3.1.3
C2l. Placement of AAC masonry units and construction of thin-bed mortar joints.	X			☐		TMS 402/ACI530/ASCE5 Table 3.1.3
C2m. Properties of thin-bed mortar for AAC masonry.	X			☐		TMS 402/ACI530/ASCE5 Table 3.1.3
C3. Observe preparation of	X			☐		TMS 402/ACI530/ASCE5

INSPECTIONS AND TESTS (Continuous & Periodic is as defined by the BCNYS)	CONTINUOUS	PERIODIC	BCNYS REFERENCE	CHECK IF REQUIRED	SPECIFICATION REFERENCE AND CLARIFYING NOTES (by RDP)[1]	COMMENTARY/NOTES and REFERENCE STANDARDS (by DASNY)[2]
grout specimens, mortar specimens, and/or prisms.						Table 3.1.3
Minimum Tests						
D1. Verification of f'm and f'AAC in accordance with Specification Article 1.4B prior to construction and for every 5,000sf during construction.				☐		TMS 402/ACI530/ASCE5 Table 3.1.3
D2. Verification of proportions of materials in premixed or preblended mortar, prestressing grout, and grout other than self-consolidating grout, as delivered to the project site.				☐		TMS 402/ACI530/ASCE5 Table 3.1.3
D3. Verification of Slump flow and Visual Stability Index (VSI) as delivered to the project site in accordance with Specification Article 1.5B.1.b.3 for self-consolidating grout.				☐		TMS 402/ACI530/ASCE5 Table 3.1.3
E. Wood Construction			1705.5			
1. High Load Diaphragms		X	1705.5.1	☐		
2. Metal Plate Connected Wood Trusses spanning 60 feet or Greater		X	1705.5.2	☐		
F. Soils			1705.6			
1. Verify materials below shallow foundations are adequate to achieve the design bearing capacity.		X	Table 1705.6	☒		
2. Verify excavations are extended to a proper depth and have reached proper material.		X	Table 1705.6	☒		
3. Perform classification and testing of compacted fill materials.		X	Table 1705.6	☒		
4. Verify use of proper materials, densities and lift thicknesses during placement and compaction of compacted fill.	X		Table 1705.6	☒		
5. Prior to placement of compacted fill, inspect subgrade and verify that site has been prepared properly.		X	Table 1705.6	☒		

INSPECTIONS AND TESTS (Continuous & Periodic is as defined by the BCNYS)	CONTINUOUS	PERIODIC	BCNYS REFERENCE	CHECK IF REQUIRED	SPECIFICATION REFERENCE AND CLARIFYING NOTES (by RDP)[1]	COMMENTARY/NOTES and REFERENCE STANDARDS (by DASNY)[2]
G. Driven Deep Foundations			1705.7			
1. Verify element materials, sizes and lengths, comply with the requirements.	X		Table 1705.7	☐		
2. Determine capacities of test elements and conduct additional load tests, as required.	X		Table 1705.7	☐		
3. Inspect driving operations and maintain complete and accurate records for each elements.	X		Table 1705.7	☐		
4. Verify placement locations and plumbness, confirm type and size of hammer, record number of blows per foot of penetration, determine required penetrations to achieve design capacity, record tip and butt elevations and document any damage to foundation element.	X		Table 1705.7	☐		
5. For steel elements, perform additional special inspections in accordance with Section 1705.2.	-	-	Table 1705.7	☐		
6. For concrete elements and concrete-filled elements, perform tests and additional special inspections in accordance with Section 1705.3.	-	-	Table 1705.7	☐		
7. For specialty elements, perform additional inspections as determined by the registered design professional in responsible charge.	-	-	Table 1705.7	☐		
H. Cast-in-place Deep Foundations			1705.8			
1. Inspect drilling operations and maintain complete and accurate records for each element.	X		Table 1705.8	☐		
2. Verify placement locations and plumbness, confirm element diameters, bell diameters (if applicable), lengths, embedment into	X		Table 1705.8	☐		

INSPECTIONS AND TESTS (Continuous & Periodic is as defined by the BCNYS)	CONTINUOUS	PERIODIC	BCNYS REFERENCE	CHECK IF REQUIRED	SPECIFICATION REFERENCE AND CLARIFYING NOTES (by RDP)[1]	COMMENTARY/NOTES and REFERENCE STANDARDS (by DASNY)[2]
bedrock (if applicable) and adequate end-bearing strata capacity. Record concrete or grout volumes.						
3. For concrete elements, perform tests and additional special inspections in accordance with Section 1705.3.	-	-	Table 1705.8	☐		
I. Helical Pile Foundations	X		1705.9			
J. Fabricated Items			1705.10 1704.2.5			Where fabrication of structural, load-bearing, or lateral load resisting members or assemblies is being conducted on the premises of a fabricators shop
1. Structural Steel		X		☐		
2. Steel Joists		X		☐		
3. Precast Concrete		X		☐		
4. Wood Construction		X		☐		
K. Special Inspections for Wind Resistance			1705.11			RDP to identify the main windforce-resisting systems and wind-resisting components that are subject to special inspection per BCNYS Section 1704.3.3.
1. Structural Wood	X	X	1705.11.1	☐		
2. Cold Formed steel light framed Construction		X	1705.11.2	☐		
3. Wind-resisting Components		X	1705.11.3	☐		
L. Special Inspections for Seismic Resistance			1705.12			RDP to identify the designated seismic systems and seismic force-resisting systems that are subject to special inspection per BCNYS Section 1704.3.2.
1. Structural Steel		X	1705.12.1	☐		AISC 341 Section J
2. Structural Wood	X	X	1705.12.2	☐		
3. Cold Formed steel light framed Construction		X	1705.12.3	☐		
4. Designated seismic systems	X	X	1705.12.4	☐		ASCE 7 Section 13.2.2
5. Architectural Components		X	1705.12.5	☐		
6. Plumbing, Mechanical, and Electrical Components		X	1705.12.6	☐		
7. Storage Racks		X	1705.12.7	☐		
8. Seismic Isolation Systems		X	1705.12.8	☐		
9. Cold Formedsteel special		X	1705.12.9	☐		

INSPECTIONS AND TESTS (Continuous & Periodic is as defined by the BCNYS)	CONTINUOUS	PERIODIC	BCNYS REFERENCE	CHECK IF REQUIRED	SPECIFICATION REFERENCE AND CLARIFYING NOTES (by RDP)[1]	COMMENTARY/NOTES and REFERENCE STANDARDS (by DASNY)[2]
bolted moment frames						
M. Testing for Seismic Resistance			1705.13			
1. Structural Steel		X	1705.13.1	☐		
2. Nonstructural Components		X	1705.13.2	☐		
3. Designated Seismic Systems		X	1705.13.3	☐		
4. Seismic Isolation Systems		X	1705.13.4	☐		
N. Sprayed Fire-Resistant Materials			1705.14			
1. Physical and visual tests		X	1705.14.1	☒		
2. Structural Member Surface Conditions		X	1705.14.2	☒		
3. Application		X	1705.14.3	☒		
4. Thickness		X	1705.14.4	☒		
5. Density		X	1705.14.5	☒		
6. Bond Strength		X	1705.14.6	☐		
O. Mastic and Intumescent Fire-Resistant Coatings		X	1705.15	☐		
P. Exterior Insulation and Finish Systems (EIFS)			1705.16			
1. Exterior Insulation and Finish Systems (EIFS)		X	1705.16	☐		
2. Water Resistive Barrier Coating		X	1705.16.1	☐		
Q. Fire-Resistant Penetration and Joints			1705.17			
1. Penetration Firestops		X	1705.17.1	☐		
2. Fire-resistant joint systems		X	1705.17.2	☐		
R. Testing for Smoke Control			1705.18			
1. Testing Scope		X	1705.18.1	☐		
2. Qualifications		X	1705.18.2	☐		
S. Additional Special Inspections/Tests			The registered design professional of record shall identify if additional tests and inspection defined by BC Section 1705.1.1 are required and provide specific requirements below.			
1.	☐	☐		☐		
2.	☐	☐		☐		
3.	☐	☐		☐		
4.	☐	☐		☐		
5.	☐	☐		☐		
6.	☐	☐		☐		
7.	☐	☐		☐		

INSPECTIONS AND TESTS (Continuous & Periodic is as defined by the BCNYS)	CONTINUOUS	PERIODIC	BCNYS REFERENCE	CHECK IF REQUIRED	SPECIFICATION REFERENCE AND CLARIFYING NOTES (by RDP)[1]	COMMENTARY/NOTES and REFERENCE STANDARDS (by DASNY)[2]
8.	☐	☐		☐		
9.	☐	☐		☐		
10.	☐	☐		☐		

NOTES:

1. RDP to provide reference specification section detailing the requirements for inspections and/or tests and other clarifying notes, as necessary.
2. Commentary/Notes by DASNY are provided for information only and are not intended to provide complete details of the required tests and inspections. Refer to the Building Code of New York State for complete and detailed requirements.

SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The Contract Documents, including but not limited to, the Drawings and Individual Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.

B. Related Sections:

1. Section 011200 – Contract Summary of Work, for work restrictions and limitations on utility interruptions.

1.3 USE CHARGES

A. General: Installation, removal, and use charges for temporary facilities shall be included in the Contract Sum. Allow other entities to use temporary services and facilities without cost, including, but not limited to, the Owner**,** the Design Professionals, occupants of the Project, testing agencies, and authorities having jurisdiction.

B. Water and Sewer Service from Existing System: Water from the Owner's existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

C. Electric Power Service from Existing System: Electric power from the Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

1.4 INFORMATIONAL SUBMITTALS

A. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.

B. Erosion and Sedimentation Control Plan: Show compliance with requirements of New York State Department of Environmental Conservation Stormwater General Permit or authorities having jurisdiction, whichever is more stringent.

C. Moisture-Protection Plan: Describe procedures and controls for protecting materials and construction from water absorption and damage; including delivery, handling, and storage

provisions for materials subject to water absorption or water damage, discarding water-damaged materials, protocols for mitigating water intrusion into completed Work, and replacing water damaged Work.

1. Indicate sequencing of work that requires water, such as sprayed fire-resistive materials, plastering, and terrazzo grinding, and describe plans for dealing with water from these operations. Show procedures for verifying that wet construction has dried sufficiently to permit installation of finish materials.

D. Dust-Control and HVAC-Control Plan: Submit coordination drawing and narrative that indicates the dust-control and HVAC-control measures proposed for use, proposed locations, and proposed time frame for their operation. Identify further options if proposed measures are later determined to be inadequate. Include the following:

1. Locations of dust-control partitions at each phase of the work.
2. HVAC system isolation schematic drawing.
3. Location of proposed air filtration system discharge.
4. Other dust-control measures.
5. Waste management plan.

1.5 QUALITY ASSURANCE

A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations and requirements of authority having jurisdiction for temporary electric service. Install service to comply with NFPA 70.

B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

C. Accessible Temporary Egress: Comply with applicable provisions in ADA-ABA Accessibility Guidelines and ANSI A117.1.

1.6 PROJECT CONDITIONS

A. Temporary Use of Permanent Facilities: Engage installer of each permanent service to assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before the Owner's acceptance, regardless of previously assigned responsibilities. Temporary use of permanent facilities during construction may be allowed at the sole discretion of the Owner.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Portable Chain-Link Fencing: Minimum 0.148-inch thick, galvanized steel, chain-link fabric fencing; minimum 8 feet high with galvanized steel pipe posts; minimum 2-3/8-inch OD line

posts and 2-7/8-inch OD corner and pull posts, with 1-5/8-inch OD top and bottom rails. Provide galvanized steel bases for supporting posts.

B. Polyethylene Sheet: Reinforced, fire-resistive sheet, 10 mils minimum thickness, with flame-spread rating of 15 or less per ASTM E 84.

C. Dust Control Adhesive-Surface Walk-off Mats: Provide mats minimum 36 by 60 inches.

D. Insulation: Unfaced mineral-fiber blanket, manufactured from glass, slag wool, or rock wool; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively.

2.2 TEMPORARY FACILITIES

A. Field Offices, General: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.

B. Owner's-Use Field Office: Of sufficient size to accommodate needs of the Owner and construction personnel office activities and to accommodate project meetings. Keep office clean and orderly. Furnish and equip offices as follows:

1. Furniture required for the Project-site documents including file cabinets, plan tables, plan racks, and bookcases.
2. Conference room of sufficient size to accommodate meetings of 2**0** individuals. Provide electrical power service and 120-V ac duplex receptacles, with not less than 1 receptacle on each wall. Furnish room with conference table, chairs, and 4-foot square tack and marker boards.
3. Drinking water and private toilet and sink with hot and cold water.
4. Heating and cooling equipment necessary to maintain a uniform indoor temperature of 68 to 72 deg F.
5. Lighting fixtures capable of maintaining average illumination of 20 fc at desk height.
6. Cleaning services for all rooms on a bi-weekly basis. Provide bathroom supplies.

C. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.

1. Store combustible materials apart from building.

2.3 EQUIPMENT

A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

B. HVAC Equipment: Unless the Owner authorizes use of permanent HVAC system, provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.

1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.

2. Heating Units: Listed and labeled for type of fuel being consumed, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
3. Permanent HVAC System: If the Owner authorizes use of permanent HVAC system for temporary use during construction, provide filter with MERV of 8 at each return air grille in the system and replace as needed in accordance with the filter manufacturers recommendations. Remove at end of construction.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Locate facilities where they will serve the Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.

B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

A. General: Install temporary service or connect to existing service.

1. Arrange with utility company, the Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.

B. Water Service: Connect to the Owner's existing water service facilities. Clean and maintain water service facilities in a condition acceptable to the Owner. At Substantial Completion, restore these facilities to condition existing before initial use.

C. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.

1. Toilets: Use of the Owner's existing toilet facilities will be permitted, as long as facilities are cleaned and maintained in a condition acceptable to the Owner. At Substantial Completion, restore these facilities to condition existing before initial use.

D. Heating and Cooling: Provide temporary heating and cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.

E. Isolation of Work Areas in Occupied Facilities: Prevent dust, fumes, and odors from entering occupied areas.

1. Prior to commencing work, isolate the HVAC system in area where work is to be performed in accordance with approved coordination drawings.

a. Disconnect supply and return ductwork in work area from HVAC systems servicing occupied areas.
b. Maintain negative air pressure within work area using HEPA-equipped air filtration units, starting with commencement of temporary partition construction, and continuing until removal of temporary partitions is complete.

2. Maintain dust partitions during the Work. Use vacuum collection attachments on dust-producing equipment. Isolate limited work within occupied areas using portable dust containment devices.
3. Perform daily construction cleanup and final cleanup using approved, HEPA-filter-equipped vacuum equipment.

F. Ventilation and Humidity Control: Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.

G. Electric Power Service: Connect to the Owner's existing electric power service. Maintain equipment in a condition acceptable to the Owner. Obtain all required permits.

H. Electric Power Service: Provide electric power service and distribution system of sufficient size, number of phases, capacity, and power characteristics required for construction operations and testing of all installed equipment.
1. Connect temporary service to the Owner's existing power source, as directed by the Owner.

I. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.

1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.
2. Install lighting for the Project identification sign.

J. Telephone Service: Provide temporary telephone service in Owner’s-use facilities for use by all construction personnel. Install two telephone lines for each field office.

1. Provide additional telephone lines for the following:

a. Provide a dedicated telephone line for each facsimile machine in each field office.

2. At each telephone, post a list of important telephone numbers.

a. Police and fire departments.
b. Ambulance service.
c. Contractor's home office.
d. Design Professional’s office.
e. Testing Consultant’s offices.
f. Owner's office.
g. Principal subcontractors' field and home offices.

3. Provide superintendent with cellular telephone for use when away from field office.

3.3 SUPPORT FACILITIES INSTALLATION

A. General: Comply with the following:

1. Provide construction for temporary offices, shops, and sheds located within construction area or within 30 feet of building lines that is noncombustible according to ASTM E 136. Comply with NFPA 241.
2. Maintain support facilities until Substantial Completion inspection date is scheduled. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to the Owner.

B. Temporary Use of Permanent Roads and Paved Areas: Locate temporary roads and paved areas in same location as permanent roads and paved areas. Construct and maintain temporary roads and paved areas adequate for construction operations. Extend temporary roads and paved areas, within construction limits indicated, as necessary for construction operations.

1. Coordinate elevations of temporary roads and paved areas with permanent roads and paved areas.
2. Prepare subgrade and install subbase and base for temporary roads and paved areas specified in Individual Specification Sections.
3. Delay installation of final course of permanent hot-mix asphalt pavement until immediately before Substantial Completion. Repair hot-mix asphalt base-course pavement before installation of final course.

C. Traffic Controls: Comply with requirements of authorities having jurisdiction.

1. Protect existing site improvements to remain including curbs, pavement, and utilities.
2. Maintain access for fire-fighting equipment and access to fire hydrants.

D. Parking: Provide temporary parking areas for construction personnel.

E. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain the Project site, excavations, and construction free of water.

1. Dispose of rainwater in a lawful manner that will not result in flooding the Project or adjoining properties nor endanger permanent Work or temporary facilities.
2. Remove snow and ice as required to minimize accumulations.

F. Project Signs: Provide Project signs as indicated. Unauthorized signs are not permitted.

1. Identification Signs: Provide Project identification signs as specified in the Contract Documents.
2. Temporary Signs: Provide other signs as required to inform public and individuals seeking entrance to the Project.

    a. Provide temporary, directional signs for construction personnel and visitors.

3. Maintain and touchup signs so they are legible at all times.

G. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction.

H. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.

1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

I. Existing Stair Usage: Use of the Owner's existing stairs will be permitted, provided stairs are cleaned and maintained in a condition acceptable to the Owner. At Substantial Completion, restore stairs to condition existing before initial use.

1. Provide protective coverings, barriers, devices, signs, or other procedures to protect stairs and to maintain means of egress. If stairs become damaged, restore damaged areas so no evidence remains of correction work.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

B. Temporary Erosion and Sedimentation Control: Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to undisturbed areas and to adjacent properties and walkways, according to authorities having jurisdiction.

1. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross tree- or plant- protection zones.
2. Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.
3. Clean, repair, and restore adjoining properties and roads affected by erosion and sedimentation from the project site during the course of the project.
4. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

C. Stormwater Control: Comply with requirements of authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.

D. Tree and Plant Protection: Install temporary fencing outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.

E. Site Enclosure Fence: Before construction operations begin furnish and install site enclosure fence in a manner that will prevent people and animals from easily entering site except by entrance gates.

1. Extent of Fence: As required to enclose entire Project site or portion determined sufficient to accommodate construction operations.
2. Maintain security by limiting number of keys and restricting distribution to authorized personnel. Furnish one set of keys to the Owner.

F. Security Enclosure and Lockup: Install temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security. Lock entrances at end of each work day.

G. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.

H. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.

I. Covered Walkway: Erect protective, covered walkway for passage of individuals through or adjacent to Project site. Coordinate with entrance gates, other facilities, and obstructions. Comply with regulations of authorities having jurisdiction.

1. Construct covered walkways using scaffold or shoring framing.
2. Provide overhead decking, protective enclosure walls, handrails, barricades, warning signs, exit signs, lights, safe and well-drained walkways, and similar provisions for protection and safe passage.
3. Paint and maintain appearance of walkway for duration of the Work.

J. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.

1. Where heating or cooling is needed and permanent enclosure is not complete, insulate temporary enclosures.

K. Temporary Partitions: Provide floor-to-ceiling dustproof partitions to limit dust and dirt migration and to separate areas occupied by the Owner from fumes and noise.

1. Construct dustproof partitions with fire rated gypsum wallboard with joints taped on occupied side, and fire-retardant plywood on construction operations side.
2. Where fire-resistance-rated temporary partitions are required by authorities having jurisdiction, construct partitions according to the rated assemblies.
3. Insulate partitions to control noise transmission to occupied areas.
4. Seal joints and perimeter. Equip partitions with gasketed dustproof doors and security locks where openings are required.
5. Protect air-handling equipment.
6. Provide walk-off mats at each entrance through temporary partition.

L. Fire Safety During Construction: Comply with all requirements identified herein as well as the more stringent requirements of the applicable codes (New York State Building and Fire Codes).

1. No smoking: Smoking shall be prohibited throughout the project/construction site. “No Smoking” signs shall be conspicuously posted at all entrances and throughout the site.

2. The Contractor shall designate a Fire Prevention Program Superintendent/ Fire Safety Manager who shall be responsible for all fire safety efforts until completion and acceptance of the Work described in the Contract Documents that include but are not limited to the following:

    a. Prefire Plans. Develop in cooperation with the local Fire Chief and Fire Code Official. Any changes affecting the utilization of information contained in the plan shall result in notification to the local Fire Chief and Fire Code Official.
    b. Training. Job site personnel shall be trained in fire safety practices and procedures and the proper use of fire protection equipment, including hand-held fire extinguishers, hose lines, fire alarm and sprinkler systems.
    c. Fire Protection Devices. Fire protection and detection equipment shall be maintained and serviced.
    d. Hot Work Operations. Welding, cutting, open torches, torch-applied roof system activities, and other hot work operations shall be conducted under a permit system. A fire watch and fire extinguishers shall be provided.
    e. Impairment of Fire Protection Systems. Coordinate planned, emergency or accidental impairments of fire protection systems to include tagging of impaired systems and notification of Fire Department, Alarm Company, Building Owner/Operator, and Contractors.
    f. Temporary Covering of Fire Protection Devices. Coverings placed on or over fire protection devices for protection from damage shall be immediately removed upon the completion of the Work in the room or area in which the devices are installed.

3. Provide readily accessible telephone service for fire calls at a location or locations approved by the Owner.

    a. The Contractor shall pay all costs thereof until completion and acceptance of the Work or as otherwise directed by the Owner.
    b. Provide/post the street address of the construction site and the emergency telephone number of the Fire Department adjacent to the telephone.

3.5 MOISTURE AND MOLD CONTROL

A. Contractor's Moisture-Protection Plan: Avoid trapping water in finished work. Document visible signs of mold that may appear during construction.

B. Exposed Construction Phase: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect as follows:

1. Protect porous materials from water damage.
2. Protect stored and installed material from flowing or standing water.
3. Keep porous and organic materials from coming into prolonged contact with concrete.
4. Remove standing water from decks.
5. Keep deck openings covered or dammed.

C. Partially Enclosed Construction Phase: After installation of weather barriers but before full enclosure and conditioning of building, when installed materials are still subject to infiltration of moisture and ambient mold spores, protect as follows:

1. Do not load or install drywall or other porous materials or components, or items with high organic content, into partially enclosed building.
2. Keep interior spaces reasonably clean and protected from water damage.
3. Periodically collect and remove waste containing cellulose or other organic matter.
4. Discard or replace water-damaged material.
5. Do not install material that is wet.
6. Discard, replace or clean stored or installed material that begins to grow mold.
7. Perform work in a sequence that allows any wet materials adequate time to dry before enclosing the material in drywall or other interior finishes.

D. Controlled Construction Phase of Construction: After completing and sealing of the building enclosure but prior to the full operation of permanent HVAC systems, maintain as follows:

1. Control moisture and humidity inside building by maintaining effective dry-in conditions.
2. Use permanent HVAC system to control humidity.
3. Comply with manufacturer's written instructions for temperature, relative humidity, and exposure to water limits.

    a. Hygroscopic materials that may support mold growth, including wood and gypsum-based products, that become wet during the course of construction and remain wet for 48 hours are considered defective.
    b. Measure moisture content of materials that have been exposed to moisture during construction operations or after installation. Record daily readings over a forty-eight hour period. Identify materials containing moisture levels higher than allowed. Report findings in writing to the Design Professional.
    c. Remove materials that can not be completely restored to their manufactured moisture level within 48 hours.

3.6 OPERATION, TERMINATION, AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

B. Maintenance: Maintain facilities in good operating condition until removal.

1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.

D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. Materials and facilities that constitute temporary facilities are property of the Contractor. The Owner reserves right to take possession of the Project identification signs.
2. Remove temporary roads and paved areas not intended for or acceptable for integration into permanent construction. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.
3. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Section 017700 – Contract Closeout Requirements.

END OF SECTION 015000

SECTION 016000 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The Contract Documents, including but not limited to, the Drawings and Individual Specification Sections and Contractor's Submittal Schedule, apply to this section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for selection of products for use in the Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.

B. Related Sections:
1. Section 013300 – Submittal Procedure, for product submittals.

1.3 DEFINITIONS

A. Products: Items obtained for incorporating into the Work of the Contract and purchased new for the Project. The term "product" includes the terms "material," "equipment," and "system."

1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
3. Comparable Product: Product that is demonstrated and approved through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

B. Procurement Exemption Approval Product Specification: A specification in which a specific manufacturer's product is named including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes as a single source or sole source provider.

1.4 ACTION SUBMITTALS

A. Comparable Product Requests: Submit request for consideration of each comparable product. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Include data to indicate compliance with the requirements specified in "Comparable Products" from Article 5, Section 5.04 of the General Conditions.
2. Design Professional's Action: If necessary, the Design Professional will request additional information or documentation for evaluation within one week of receipt of a comparable product request. The Design Professional will notify the Contractor through the Owner of approval or rejection of proposed comparable product request within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.

a. Form of Approval: As specified in Section 013300 - Submittal Procedure.
b. Use product specified if the Design Professional does not issue a decision on use of a comparable product request within time allocated.

B. Procurement Exemption Approval Product Specification Submittal: Comply with requirements in Section 013300 - Submittal Procedure. Show compliance with requirements.

1.5 QUALITY ASSURANCE

A. Compatibility of Options: If the Contractor is given option of selecting between two or more products for use on the Project, select product compatible with products previously selected, even if previously selected products were also options.

1. Each contractor is responsible for providing products and construction methods compatible with products and construction methods of other contractors.
2. If a dispute arises between contractors over concurrently selectable but incompatible products, the Design Professional will determine which products shall be used.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.

B. Delivery and Handling:

1. Schedule delivery to minimize long-term storage at the Project site and to prevent overcrowding of construction spaces.
2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.

3. Deliver products to the Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.

C. Storage:

1. Store products to allow for inspection and measurement of quantity or counting of units.
2. Store materials in a manner that will not endanger the Project structure.
3. Store products that are subject to damage by the elements under cover in a weather tight enclosure above ground, with ventilation adequate to prevent condensation.
4. Store foam plastic protected from exposure to sunlight, except to extent necessary for period of installation and concealment.
5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
6. Protect stored products from damage and liquids from freezing.

1.7 PRODUCT WARRANTIES

A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of obligations under requirements of the Contract Documents.

1. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to the Owner.
2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for the Owner.

B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.

1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
2. Refer to individual specification sections for specific content requirements and particular requirements for submitting special warranties.

C. Submittal Time: Comply with requirements in Section 013300 – Submittal Procedure.

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and new at time of installation.

1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
3. The Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
4. Where products are accompanied by the term "as selected," the Design Professional will make selection.
5. Descriptive, performance, and reference standard requirements in the Specifications establish characteristics of products.
6. Or Equal: For products specified by name and accompanied by the term "or equal," or "or approved equal," or "or approved," comply with requirements in "Comparable Products" Article to obtain approval for use of an unnamed product.
7. Provide products that do not contain asbestos.

B. Product Selection Procedures:

1. Product: Where Specifications include a procurement exemption approval and name a single source, sole source, manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for the Contractor's convenience will not be considered.
2. Manufacturer/Source: Where Specifications include a procurement exemption approval and name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for the Contractor's convenience will not be considered.
3. Products: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product.
4. Manufacturers: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed, or a product by an unnamed manufacturer, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed manufacturer's product.

C. Visual Matching Specification: Where Specifications require "match sample", provide a product that complies with requirements and matches sample. The Owner's decision will be final on whether a proposed product matches.

1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in "Comparable Products" Article for consideration of an unnamed manufacturer's product.

D. Visual Selection Specification: Where Specifications include the phrase "as selected from manufacturer's full range", select a product that complies with requirements. The Design Professional will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 COMPARABLE PRODUCTS

A. Conditions for Consideration: The Design Professional will consider the Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, the Design Professional may return requests without action, except to record noncompliance with these requirements:

1. Action Submittal shall be provided in accordance with Submittal Procedures within 60 days after Notice to Proceed.
2. Evidence that the proposed product does not require revisions to the Contract Documents that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
3. Detailed comparison of qualities of proposed product with those named in the Specifications, including attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
4. Evidence that proposed product provides specified warranty.
5. List of similar installations for completed projects with project names and addresses and names and addresses of design professionals and owners, if requested.
6. Samples, if requested.

B. Comparable Products Costs: Any costs savings to an approved Comparable Product identified and realized by the Contractor shall be shared equal between the Owner (50%) and Contractor (50%).

PART 3 - EXECUTION (Not Used)

END OF SECTION 016000

SECTION 017329 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The Contract Documents, including but not limited to, the Drawings and Individual Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes procedural requirements for cutting and patching.

B. Responsibility: Each Contractor is responsible for the cutting and patching to permit installation or performance of Work of their contract.

C. Related Sections include the following:

1. Individual Specification Sections.

1.3 DEFINITIONS

A. Cutting: Removal of in-place construction necessary to permit installation or performance of Work of the contract.

B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of Work of the contract.

1.4 SUBMITTALS

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

1. Extent: At each occurrence, describe cutting and patching, show how they will be performed, and indicate why they cannot be avoided.
2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building's appearance and other significant visual elements.
3. Products: List products to be used and firms or entities that will perform the Work.
4. Dates: Indicate when cutting and patching will be performed.
5. Utility Services and Mechanical/Electrical Systems: List services/systems that cutting and patching procedures will disturb or affect. List services/systems that will be

relocated and those that will be temporarily out of service. Indicate how long services/systems will be disrupted.

6. Structural Elements: Where cutting and patching involve adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with original structure.
7. Design Professional's Approval: Obtain approval of cutting and patching proposal before cutting and patching. Approval does not waive right to later require removal and replacement of unsatisfactory work.

1.5 QUALITY ASSURANCE

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

B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that result in increased maintenance or decreased operational life or safety.

C. Fire Rated Elements: Do not cut and patch fire rated elements (i.e. floors, walls, roofs, shafts, etc.) in a manner that results in reducing their capacity to perform as intended or that results in decreased fire rating.

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

E. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Design Professional's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

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

1.6 WARRANTY

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

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Comply with requirements specified in other Sections.

B. In-Place Materials: Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.

1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of in-place materials, unless specified otherwise in other Sections.

C. Fire Rated Elements: Provide firestopping products/systems specified in system design listings by approved testing agencies that conform to the construction type, penetrating item, annular space requirements and fire rating involved in each separate assembly. Refer to applicable Individual Specification Sections.

PART 3 - EXECUTION

3.1 EXAMINATION

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

1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.
2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.2 PREPARATION

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

B. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

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

D. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting or patching to minimize interruption to occupied areas.

3.3 PERFORMANCE

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

1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

B. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction.

1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
3. Concrete or Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
4. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
5. Proceed with patching after construction operations requiring cutting are complete.

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

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.

a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
b. Restore damaged pipe covering to its original condition.

3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.

a. Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken surface

containing the patch. Provide additional coats until patch blends with adjacent surfaces.

4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.

5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.

6. Fire Rated Elements: Install firestopping systems to comply with applicable Individual Specification Sections and firestopping manufacturer's written installation instructions and published drawings for products and applications.

D. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

END OF SECTION 017329

SECTION 017419 – CONSTRUCTION WASTE MANAGEMENT

PART 1 - GENERAL

1.01 SUMMARY

A. This Section includes requirements for Construction Waste Management (CWM), with criteria for recycling and/or salvaging demolition and construction waste generated during the project. A Construction Waste Management Plan shall be developed for approval by the Construction Manager and DASNY Project Manager. The Plan shall be implemented throughout the duration of the project, and shall be documented in accordance with the SUBMITTALS Article below.
1.

B. Responsible parties:
1. Locations for removal bins or dumpsters shall be coordinated with DASNY's Project Manager.
2. Each contractor shall supply a CWM plan detailing the means and methods for recycling job site waste. Following the award of contract, the Contractors shall identify a single entity to act as the construction waste manager.
3. All Contractors will receive and sign-off on the CWM plan. They will be responsible for adherence to the plan through management of their work on-site and the waste generated under their contract.
   a. Sign-off and adherence to the plan applies even when a separate bid package is established for the CWM.

C. Resources

1. NY CD Resource Center
   727 East Washington Street
   Syracuse, New York 13210
   Bgriffin@syracusecoe.org (315) 443-9747

Initiated with support from Empire State Development, The NY CD Resource Center supports and promotes the growth of C&D recycling and building materials reuse (BMR) in New York State through a variety of market-development and network-building activities. Key among these activities is the provision of C&D materials management training to New York contractors and haulers, many of whom want to increase recycling at construction sites but need help getting started. The program also offers on-site assistance at construction sites.

2. ESD Recycling Market Information Database.
   http://appcenter.nylovesbiz.com/esdrecycling/.

1.02 PERFORMANCE REQUIREMENTS

A. Each Contract shall prepare and submit a CWM Plan to the Design Professional for approval. The CWM Plan shall outline the provisions to be implemented to salvage for reuse or to recycle demolition and construction waste generated during the project.

B. The approved CWM Plan shall be implemented throughout the duration of the project and documented in accordance with the SUBMITTALS Article below.

C. The CWM Plan shall include, but not be limited to, the following components:

1. Re-Used materials/equipment: Materials or equipment to be removed from the site or turned over to the State shall be documented.
   a. Documentation shall include the materials turned over, weight or quantity of materials/equipment and a letter on company letterhead indicating the intended use of items.

2. Listing of Targeted Materials: Develop a list of the waste materials from the Project that will be targeted for reuse, salvage, or recycling. The following materials shall be accounted for (materials that will not be recycled shall be indicated as such):
   a. Cardboard, paper, packaging
   b. Acoustical Ceiling Tiles
   c. Clean dimensional wood, palette wood
   d. Beverage containers
   e. Land clearing debris
   f. Concrete
   g. Stone
   h. Concrete Masonry Units (CMU)
   i. Asphalt
   j. Metals from banding, stud trim, ductwork, piping, rebar, roofing, windows, other trim, steel, iron, galvanized sheet steel, stainless steel, aluminum, copper, zinc, lead, brass, and bronze
   k. Gypsum board
   l. Carpet and pad
   m. Paint
   n. Asphalt roofing shingles if applicable for any existing building demolition
   o. Rigid Foam
   p. Glass
   q. Plastics
   r. Woods
3. Sorting Method: Provide a description of the proposed means of sorting and transporting the recyclable materials (whether materials will be on-site sorted and then hauled to designated centers, or whether mixed materials will be collected by a waste hauler and removed from the site for off-site sorting).

4. Recycling facilities: Provide the name of the recycling facilities(s) where materials will be sent for recycling, how it will be recycled, and the applicable fee(s).
5. Landfill Information: Provide the name of the landfill(s) where trash will be disposed of and the applicable landfill tipping fee(s).
6. Additional Information: Include any additional information deemed relevant to describe the scope and intent of the CWM Plan to the Design Professional.
7. Subcontractor Requirements: Construction Waste Management and recycling requirements shall be incorporated into all Subcontractors' contracts.

1.03 SUBMITTALS

A. Submittal Requirements:
1. A copy of the CWM Plan, as defined in the PERFORMANCE REQUIREMENTS Article above.
2. Contractors shall submit a monthly Waste Management submission.
   a. This submission shall include waste receipts and a completed Waste Management Form. (a sample form is included at the end of this Section identified as Exhibit "A")
3. Calculations and supporting documentation to demonstrate end-of–project recycling rates meeting the requirements of the CWM Plan. Note: These calculations and supporting documentation are required regardless of method of processing (on-site or off-site separations). Use these Solid Waste Conversion Factors only if tipping tickets are not available if the weight in each dumpster or container is not directly measured.

Solid Weight Conversion Factors	
Mixed Waste	350 lbs/cubic yard
Wood	300 lbs/cubic yard
Cardboard	100 lbs/cubic yard
Gypsum Board	500 lbs/cubic yard
Rubble	1,400 lbs/cubic yard
Steel	1,000 lbs/cubic yard

   b. Record and document the total weight (in tons) of all demolition and construction waste materials sent to the landfill, or recycled or salvaged. Monthly Waste Management Reporting Forms shall be used as the basis for determining the total amount of waste recycled or salvaged for the project. The monthly reporting forms shall specify:
      1) The number of dumpsters or other containers of recycled or salvaged materials for that month.
      2) The volume (in cubic yards) of each dumpster or container of recycled or salvaged materials for that month.

3) The type of recycled or salvaged material contained in each dumpster or container.
4) The weight of the recycled or salvaged material in each dumpster or container. For materials not contained in the Solid Waste Conversion Factors above propose a conversion factor for review by the Design Professional.
5) In addition, provide the name of the receiving facilities/companies that will be purchasing or accepting the recycled or salvaged materials. Receipts or other proof of facility reception of materials is required.
6) For materials separated for recycling off-site, establish a method for tracking the weight of the recycled material. The method shall be included in the CWM Plan for the Design Professional review and approval.

c. In the case of off-site separation, ensure the transfer station used will provide tickets with required information on delivery weights (or volume with appropriate conversions), and proof of recycling rates for reporting.
d. Calculate the end-of-project recycling rate percentage by dividing the recycled and salvaged waste (in tons) by the total waste generated (recycled, salvaged, and landfilled waste – also in tons), and multiplying by 100.
e. For materials turned over to others for reuse, provide documentation on company letterhead indicating the material(s), the quantity (either by weight or units), the date and the intended reuse of the product.

PART 3 EXECUTION

3.01 IMPLEMENTATION

The following implementations of the CWM Plan will be the responsibility of either the Contractor for the Construction Work or the CWM Contractor if that work is bid out under separate contract.

A. Containers: Provide containers and the removal of all waste, non-returned surplus materials, and rubbish from the site in accordance with the Waste Management Plan. Oversee and document the results of the Plan. The Prime Contractors shall be responsible for collecting, sorting, and depositing in designated areas, their waste, non-returned surplus materials, and rubbish, as per the CWM Plan.

B. Instruction: Provide on-site instruction of appropriate separation, handling and recycling, salvage, reuse and return methods to be used by all parties in appropriate stages of the Project.

C. Separation of materials: Recycling and waste bin areas are to be kept neat and clean, and clearly marked.

1 On-site separation: Lay out a specific area(s) to facilitate separation of materials for potential recycling, salvage, reuse and return. Each potential material shall be collected and stored to avoid being mixed with other materials

2. Off-site separation: Lay out an area for collection of mingled recyclable and waste materials, to be picked up and sorted off-site for recycling.

3.02 MEETINGS

A. Conduct Construction Waste Management meetings. Meetings shall include Subcontractors affected by the CWM Plan. At a minimum, waste management goals and issues shall be discussed at the following meetings:
   1. Pre-bid meeting.
   2. Pre-construction meeting.
   3. Regular job-site meetings.

B. Any non-compliant practices in the field will be addressed at regular job-site meetings.

3.03 MONTHLY WASTE MANAGEMENT REPORTING FORMS

A. Monthly Waste Management Reporting Forms, as required in the SUBMITTALS Article above, shall be submitted to the Design Professional for review throughout the duration of the project.

END OF SECTION

(Project Name) (Exhibit "A")
CONTRACTOR C&D WASTE MANAGEMENT FORM
For Waste Generated On-Site

Company: _____

Contact: _____

Phone: _____

Material Description (Include packaging waste if applicable)	**Total Weight**	**% Reused on-site**	**% Recycled off-site**	**% Sent to landfill**	**Material Recipient**

Recycled Material: Material that would otherwise be destined for landfill but is diverted from the waste stream, reintroduced as material feedstock and reprocessed into new end products.

Reused Material: Materials that can be reused in their original form without any reprocessing.

SECTION 017700 – CONTRACT CLOSEOUT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The Contract Documents, including but not limited to, the Drawings and Individual Specification Sections and Notice of Substantial Completion (NOSC) Form, apply to this section.

1.2 SUMMARY

A. Section includes administrative requirements for preparation and submission of final Contract Closeout Documents, including, but not limited to, the following:

1. Contract Closeout Meeting
2. Notice of Substantial Completion (NOSC) Requirements
    a. List of Incomplete Work Items
    b. Contract Turnover Documents
        1) As-built Drawings
        2) As-built Specifications
        3) As-built Schedule
        4) Permits, Licenses and Certificates
        5) Hazardous Wastes Documents
    c. General Guarantee
    d. Operation and Maintenance Manuals
3. Contract Closeout
4. Final Cleaning

B. Related Sections:

1. General Conditions, Article 8 – Payment
2. General Conditions, Article 13 – Inspection and Acceptance
3. Section 014000 – Quality and Code Requirements
4. Section 017823 – Operation and Maintenance Manuals
5. Section 017839 – As-built Documents

1.3 CONTRACT CLOSEOUT Meeting

A. Contract Closeout Meeting: The Owner will schedule and conduct a Contract closeout meeting, at a time convenient to the Owner and Design Professional, but no later than sixty (60) days prior to the scheduled inspection date for Substantial Completion.

1. The Owner will conduct the meeting to review requirements and responsibilities related to Contract closeout.
2. Attendees: Representatives of the Owner, testing agency, commissioning authority, Design Professional**,** and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the meeting. Participants at the meeting shall be familiar with Project and authorized to make binding decisions on matters relating to the Work.
3. Agenda: Discuss items of significance that could affect or delay Contract closeout, including the following:

    a. Status of Contract Turnover Documents.
    b. Procedures required prior to inspection for Substantial Completion and for final inspection for acceptance.
    c. Requirements for submitting final operation and maintenance manual.
    d. Requirements for Permits, Licenses and Certificates.
    e. Preparation of Contractor's list of incomplete Work items.
    f. Procedures for processing Application for Payment at Substantial Completion and final payment.
    g. Submittal procedure.
    h. Responsibility for removing temporary facilities and controls.

4. Minutes: The Owner or Design Professional will record and distribute meeting minutes.

1.4 NOTICE OF SUBSTANTIAL COMPLETION (NOSC)

A. Substantial Completion: After the Work of the Contract is determined by the Owner, to be at Substantial Completion, the Contractor shall submit a written request to the Owner for a date of inspection. The date of Substantial Completion establishes the start of the guarantee period.

B. Documentation: The Notice of Substantial Completion (NOSC) form shall be executed at the end of inspection documenting incomplete Work items and submission of documents in accordance with this section that includes but is not limited to:

    a. Preparation of a list of Work to be completed and corrected, the value of Work items on the list, and completion date of each Work item.
    b. Submittal of contract turnover documents.
    c. Submittal of operation and maintenance manuals, testing, adjustment and balance records.
    d. Delivery of tools, spare parts, extra materials, and similar items to location designated by the Owner. Label with manufacturer's name and model number where applicable.
    e. Termination and removal of temporary facilities from Project site, along with mockups, construction tools, and similar elements.
    f. Completion of final cleaning requirements.

C. SAMPLE FORM - NOTICE OF SUBSTANTIAL COMPLETION

DORMITORY AUTHORITY – STATE OF NEW YORK

NOTICE OF SUBSTANTIAL COMPLETION

INSTITUTION:		CONTRACTOR:	
PROJECT TITLE:		CONTRACT NO:	
PROJECT NO:	9999	CONTRACT VALUE:	

With exception of the list of incomplete Work and status of Contract Turnover Documents, the Dormitory Authority accepts the Work of the Contract Documents as Substantial Completion on (date) _____, in accordance with the General Conditions. This date also constitutes start of the guarantee period.

ITEM	LIST OF INCOMPLETE WORK	SCHEDULED COMPLETION DATE
1.		
2.		
3.		
4.		
5.		
6.		

NOTE: Attach additional pages if necessary.

STATUS of CONTRACT TURNOVER DOCUMENTS:	PROVIDED YES	DUE DATE	Not Applicable
As-built drawings & specifications transmitted to Design Professional	☐		☐
Certified As-built schedule transmitted to Owner	☐		☐
Sustainable documentation submitted to Owner	☐		☐
Permits, licenses and certificates submitted to Authority having jurisdiction	☐		☐
Hazard waste documentation approved by Owner	☐		☐
Operation and maintenance manual submitted to Owner in final form	☐		☐
Spare products stock stored on site per Owner's direction	☐		☐
Identify any other Contract specific turnover document	☐		☐
Identify any other Contract specific turnover document	☐		☐
Final cleaning	☐		☐

Acknowledged by the Contractor (signature& title)	Email Address	Date
Recommended by the Design Professional (signature & title)	Email Address	Date
Recommended by the Project Manager (signature)		Date
Approved by the Director/Chief (signature)		Date

Distribution by PM:
Contractor
Design Professional
Facility Representative

Distribution by PA:
Code Compliance Unit
Risk Management
Procurement Contract File (original)

NOTICE OF SUBSTANTIAL COMPLETION
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1.5 LIST OF INCOMPLETE ITEMS

A. Organization of List: Submit list of incomplete items in *EXCEL* spreadsheet electronic format. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.

1. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
2. Include the following information at the top of each page:

a. Project name & number.
b. Date.
c. Name of Contractor & Contract number.
d. Page number.

B. Reinspection: Submit a written request for reinspection. On receipt of request, the Owner will either proceed with inspection or notify the Contractor of unfulfilled requirements. After inspection, the Owner will notify the Contractor of items, either on the Contractor's list or additional items identified, that must be completed or corrected.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. Results of completed inspection will form the basis to proceed with commencement of Contract Closeout Documents.

1.6 CONTRACT TURNOVER DOCUMENTS

A. Procedure: Contract turnover documents shall be transmitted to the Owner or if stated to the Design Professional, fifteen (15) days prior to requesting inspection date for Substantial Completion.

B. As-built Drawings: Transmit one paper copy set of marked-up As-built Drawings to the Design Professional, with copy of transmittal to Owner. Print each Drawing, whether or not changes and additional information were recorded.

C. As-built Specifications: Transmit one paper copy set of marked-up as-built specifications, including addenda and contract modifications to the Design Professional, with copy of transmittal to Owner.

D. As-built Schedule: Submit one electronic (PDF) copy, certified by the Contractor, of the schedule that reflects the exact manner in which the project was actually constructed, to the Owner.

E. Permits, Licenses and Certificates Documents: Submit one copy of original permits, licenses, certifications, inspection reports, material certificates/affidavits, approvals, and related documents required by authorities having jurisdiction to obtain Letter of Completion, Certificate of Occupancy, or Code Compliance Certificate. Coordinate and respond to requirements from

the Owner, and all other authorities having jurisdiction for issuance of approval/documents required for the Owner use and occupancy.

1. Cooperate and help coordinate with agency testing materials as specified in Section 014000 – Quality and Code Requirements. Testing Agency is required to submit final report of special inspections.

F. Hazardous Waste Documents: Submit four (4) paper copies of documents to the Owner thirty (30) days prior to requesting inspection date for Substantial Completion. Refer to Individual Specification Sections for all requirements.

G. Miscellaneous Record Submittals: Refer to Individual Specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Submit one electronic (PDF) copy of each submittal.

H. Reports: Submit written report indicating items incorporated in Contract Documents concurrent with progress of the Work, including modifications, concealed conditions, field changes, product selections, and other notations incorporated.

1.7 GUARANTEE

A. General Guarantee: Comply with General Conditions, Article 13 – Inspection and Acceptance. The date established on the Notice of Substantial Completion form constitutes commencement of the Guarantee period.

1.8 OPERATION AND MAINTENANCE MANUALS

A. Final Manuals Submittal: Submit an electronic copy of a compiled set of complete Operation and Maintenance Manuals in final form as indicated in Section 017823 – Operation and Maintenance Manuals, to the Owner fifteen (15) days prior to requesting date of inspection for Substantial Completion.

1.9 CONTRACT CLOSEOUT (same as final application for payment)

A. Contract Compliance: The Contractor shall comply with the requirements of General Conditions, Section 10.08 – Limitations on Actions.

B. Preliminary Procedure: All Work and Extra Work of the Contract and requirements of this section must be complete and approved prior to commencement of Contract closeout.

1. The Contractor shall request and submit to the Owner a final Contractor’s Pencil Copy billing request that will formulate the final Application for Payment.
2. The Contractor shall provide outstanding documentation to the Owner in accordance with General Conditions, Article 20 – Opportunity Programs.

C. Procedures: Upon the Owner's approval of the Contractor's Pencil Copy billing request, Contract closeout documents will be provided to the Contractor. The Contractor shall complete each document and submit all documents with original signature & notary as indicated on forms, the following:

1. Final Application for Payment that includes remaining Retainage.
2. Final Compliance Report.
3. Contractor and Subcontractor Certifications Form.
4. Contractor's Certified Payroll Form.
5. Release Form -- Final Payment to Contractor.
6. Consent of Surety -- Final Payment to Contractor, with power of attorney.

D. Payroll Forms: The Contractor and all Sub-contractors to the Contractor shall submit original copies of the Contractor and Subcontractor Certifications Form and Contractor's Certified Payroll Form.

PART 2 - PRODUCTS

2.1 CLEANING MATERIALS

A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

1. Use cleaning products that meet Green Seal GS-37, or if GS-37 is not applicable, use products that comply with allowable VOC levels.

PART 3 - EXECUTION

3.1 DEMOBILIZATION

A. Deliver tools, spare parts, extra materials, and similar items to location designated by the Owner. Label with manufacturer's name and model number where applicable.

B. Make final changeover of permanent locks and deliver keys to the Owner. Advise the Owner's personnel of changeover.

C. Terminate and remove temporary facilities from the Project site, along with mockups, construction tools, and similar elements.

3.2 RECORDING AND MAINTENANCE

A. Recording: Maintain one copy of each submittal during the construction period for contract turnover document purposes. Post changes and modifications to contract turnover documents as they occur; do not wait until the end of the Project.

B. Maintenance of Turnover Documents and Samples: Store turnover documents and Samples in the field office apart from the Contract Documents used for construction. Contract turnover documents shall not be used for construction purposes. Maintain turnover documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to contract turnover documents for the Owner's reference during normal working hours during performance of Contract.

3.3 FINAL CLEANING

A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.

1. Complete the following cleaning operations as applies to Work of the contract.

    a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
    b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
    c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
    d. Remove tools, construction equipment, machinery, and surplus material from Project site.
    e. Remove snow and ice to provide safe access to building.
    f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
    g. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
    h. Sweep concrete floors broom clean in unoccupied spaces.
    i. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
    j. Remove labels that are not permanent.

k. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.

1) Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates.

l. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.

m. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.

n. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.

o. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

p. Leave Project clean and ready for occupancy.

C. Construction Waste Disposal: Comply with waste disposal requirements in all other applicable sections.

END OF SECTION 017800

SECTION 017823 - OPERATION AND MAINTENANCE MANUALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The Contract Documents, including but not limited to, the Drawings and Individual Specification Sections and Contractor's Submission Schedule, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:

1. Operation and maintenance manual for systems, subsystems, and equipment.
2. Product maintenance data.
3. Systems and equipment maintenance data.

B. Related Sections:

1. Section 013300 – Submittal Procedures
2. Section 017700 – Contract Closeout Requirements

1.3 DEFINITIONS

A. System: An organized collection of parts, equipment, or subsystems united by regular interaction.

B. Subsystem: A portion of a system with characteristics similar to a system.

1.4 CLOSEOUT SUBMITTALS

A. Required Manuals: see Section 017700 – Contract Closeout Requirements for additional requirements.

B. Format: Submit operations and maintenance manuals in the following format:

1. PDF electronic file. Assemble each manual into a composite electronically indexed file. Submit on digital media acceptable to the Design Professional.

a. Name each indexed document file in composite electronic index with applicable item name. Include a complete electronically linked operation and maintenance directory.

b. Enable inserted reviewer comments on draft submittals.

PART 2 - PRODUCTS

2.1 REQUIREMENTS FOR OPERATION, AND MAINTENANCE MANUALS

A. Organization: Organize the manual into separate sections by CSI number based on the table of contents of the project manual, for each system and subsystem, and a separate section for each piece of equipment not part of a system. The manual shall contain the following materials, in the order listed:

1. Title page.
2. Table of contents.
3. Manual contents:

a. Operation data.
b. Product maintenance data.
c. Systems and equipment data

B. Title Page: Include the following information:

1. Subject matter included in manual.
2. Name and address of Project.
3. Name and address of Owner.
4. Date of submittal.
5. Name and contact information for Contractor.
6. Name and contact information for Construction Manager.
7. Name and contact information for Design Professional.
8. .
9. Names and contact information for major consultants to the Design Professional that designed the systems contained in the manuals.
10. Cross-reference to related systems in other operation and maintenance manuals.

C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.

1. If operation or maintenance documentation requires more than one media volume to accommodate data, include comprehensive table of contents for all volumes in each volume of the set.

D. Manual Contents: Organize into sets of manageable size. Arrange contents by CSI Section number and then by system, subsystem, and equipment. .

E. Manuals, Electronic Copy: Submit electronic (PDF) copy of the manual, to the Design Professional, concurrent with Action Submittal.

2.2 OPERATION DATA

A. Content: In addition to requirements in this Section, include operation data required in individual Specification Section and the following information:

1. System, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents.
2. Operating standards.
3. Operating procedures.
4. Operating logs.
5. Wiring diagrams.
6. Control diagrams.
7. Piped system diagrams.
8. Precautions against improper use.
9. License requirements including inspection and renewal dates.

B. Descriptions: Include the following:

1. Product name and model number. Use designations for products indicated on Contract Documents.
2. Manufacturer's name.
3. Equipment identification with serial number of each component.
4. Equipment function.
5. Operating characteristics.
6. Limiting conditions.
7. Performance curves.
8. Engineering data and tests.
9. Complete nomenclature and number of replacement parts.

C. Operating Procedures: Include the following, as applicable:

1. Startup procedures.
2. Equipment or system break-in procedures.
3. Routine and normal operating instructions.
4. Regulation and control procedures.
5. Instructions on stopping.
6. Normal shutdown instructions.
7. Seasonal and weekend operating instructions.
8. Required sequences for electric or electronic systems.
9. Special operating instructions and procedures.

D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.

E. Piped Systems: Diagram piping as installed, and identify color-coding where required for identification.

2.3 PRODUCT MAINTENANCE DATA

A. Content: Organize data into a separate section, within the O & M Manual, for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.

B. Source Information: List each product included in section identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.

C. Product Information: Include the following, as applicable:

1. Product name and model number.
2. Manufacturer's name.
3. Color, pattern, and texture.
4. Material and chemical composition.
5. Reordering information for specially manufactured products.

D. Maintenance Procedures: Include manufacturer's written recommendations and the following:

1. Inspection procedures.
2. Types of cleaning agents to be used and methods of cleaning.
3. List of cleaning agents and methods of cleaning detrimental to product.
4. Schedule for routine cleaning and maintenance.
5. Repair instructions.

E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.

F. Warranties and Guarantees: Include copies of warranties and guarantees lists of circumstances and conditions that would affect validity of warranties.

1. Include procedures to follow and required notifications for warranty claims.

2.4 SYSTEMS AND EQUIPMENT MAINTENANCE DATA

A. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranty and bond information, as described below.

B. Source Information: List each system, subsystem, and piece of equipment included in a separate section within the O & M Manual identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.

C. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including the following information for each component part or piece of equipment:

1. Standard maintenance instructions and bulletins.
2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
3. Identification and nomenclature of parts and components.
4. List of items recommended to be stocked as spare parts.

D. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:

1. Test and inspection instructions.
2. Troubleshooting guide.
3. Precautions against improper maintenance.
4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
5. Aligning, adjusting, and checking instructions.
6. Demonstration and training video recording, if available.

E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.

1. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
2. Maintenance and Service Record: Include manufacturers' forms for recording maintenance.

F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.

G. Warranties: Include copies of warranties and lists of circumstances and conditions that would affect validity of warranties.

1. Include procedures to follow and required notifications for warranty claims.

PART 3 - EXECUTION

3.1 MANUAL PREPARATION

A. Operation and Maintenance Documentation shall be provided for review, concurrent, with Action Submittal specified in Individual Specification Section.

1. Correct or modify the manual to comply with the Design Professional's and Commissioning Authority's comments. Submit copies of each corrected manual within 15 days of receipt of Design Professional's and Commissioning Authority's comments and prior to commencing demonstration and training.

B. Product Maintenance Data: Assemble a complete set of maintenance data, in a separate section, within the O & M Manual, indicating care and maintenance of each product, material, and finish incorporated into the Work.

C. Operation and Maintenance Data: Assemble a complete set of operation and maintenance data, in a separate section, within the O & M Manual, indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.

1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
2. Prepare a separate section within the O & M Manual, for each system and subsystem, in the form of an instructional manual for use by operating personnel.

D. Manufacturers' Data: Where manual contain manufacturers' standard printed data; include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.

1. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.

E. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in As-built Drawings to ensure correct illustration of completed installation.

1. Do not use original project record documents as part of operation and maintenance manuals.

END OF SECTION 017823

SECTION 017839 – AS BUILT DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The Contract Documents, including but not limited to, the Drawings and Individual Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for As-built documents, including the following:

1. As-built Drawings
2. As-built Specifications
3. As-built Schedule
4. Record Product Data
5. Miscellaneous record submittals

B. Related Sections:

1. Section 013200 – Construction Progress Documentation
2. Section 013300 – Submittal Procedure; Required Submittal List
3. Section 017700 – Contract Closeout Requirements
4. Section 017823 – Operation and Maintenance Manuals

C. Administrative and procedural requirements for contract turnover documents, including, but not limited to the following, as provided in Individual Specifications Sections.
1. Hazardous Waste Documents

1.3 CLOSEOUT SUBMITTALS

A. Required Documents: Section 017700 – Contract Closeout Requirements, describes administrative requirements for submission, number and type of copies required for contract closeout requirements.

PART 2 - PRODUCTS

2.1 AS-BUILT DRAWINGS

A. As-built Drawings: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings onsite. Review As-built Drawings and shop drawings monthly with the Owner, for approval.

1. Preparation: Daily mark As-built Drawings to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up As-built Drawings.

    a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
    b. Accurately record information in an acceptable drawing technique.
    c. Record data as soon as possible after obtaining it.
    d. Record and check the markup before enclosing concealed installations.

2. Content: Types of items requiring marking include, but are not limited to, the following:

    a. Dimensional changes to Drawings.
    b. Revisions to details shown on Drawings.
    c. Depths of foundations below first floor.
    d. Locations and depths of underground utilities.
    e. Revisions to routing of piping and conduits.
    f. Revisions to electrical circuitry.
    g. Actual equipment locations.
    h. Duct size and routing.
    i. Locations of concealed internal utilities.
    j. Changes made by Change Order.
    k. Changes made by Bulletin.
    l. Changes made following the Owner’s written orders.
    m. Details not on the original Contract Drawings.
    n. Field records for variable and concealed conditions.
    o. Record information on the Work that is shown only schematically.

3. Mark the Contract Drawings and Shop Drawings completely and accurately. Utilize personnel proficient at recording graphic information in production of marked-up as-built prints.
4. Mark as-built sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
5. Mark important additional information that was either shown schematically or omitted from original Drawings.
6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

2.2 AS-BUILT SPECIFICATIONS

A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
4. For each principal product, indicate whether record Product Data has been submitted in operation and maintenance manuals instead of submitted as record Product Data.
5. Note related Change Orders**,** record Product Data**,** and turnover Drawings where applicable.

2.3 AS-BUILT SCHEDULE

A. Final Schedule: Submit to the Owner a final schedule update. The As-built Schedule shall reflect the exact manner in which the project was actually constructed including actual start and finish dates, activities, sequences and logic.

1. The Contractor shall certify the final schedule update as being a true reflection of the way the project was actually constructed.

2.4 RECORD PRODUCT DATA

A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Include significant changes in the product delivered to the Project site and changes in manufacturer's written instructions for installation.
3. Note related Change Orders**,** As-built Specifications, and As-built Drawings where applicable.

2.5 MISCELLANEOUS RECORD SUBMITTALS

A. Assemble miscellaneous records required by Individual Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

B. Format: Submit miscellaneous record submittals.

1. Include miscellaneous record submittals directory organized by specification section number and title, electronically linked to each item of miscellaneous record submittals.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

A. Maintain Change Log: Maintain and submit written change log to the Owner, monthly for review indicating items incorporated in contract turnover documents concurrent with progress of the Work, including modifications, concealed conditions, field changes, product selections, and other notations incorporated.

B. Recording: Maintain one copy of each submittal during the construction period for contract turnover document purposes. Post changes and modifications to contract turnover documents as they occur; do not wait until the end of the Project.

C. Maintenance of Turnover Documents and Samples: Store turnover documents and Samples in the field office apart from the Contract Documents used for construction. Contract turnover documents are not to be used for construction purposes. Maintain turnover documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to contract turnover documents for the Owner’s reference during normal working hours during performance of Contract.

END OF SECTION 017839