SECTION 010000 - GENERAL REQUIREMENTS

CONTENTS

1.1 Summary of Work: Definitions: The word "provide" means furnish and install complete. The word "Contractor" means the proper trade referred by its reference.

The contractor is referred to the "Instructions to Bidders", "Bid Form", "Form of Bid Bond", "Form of Contract", "Performance and Payment of Bonds", "General Conditions", "Supplementary General Conditions", "Contract Drawings", and any "Amendments" to any foregoing, all of which are hereby made part of this contract.

1.2 Submittals: A progress schedule shall be submitted to the Construction Manager by the Contractor prior to initiation of work and shall be adhered to at all times. Any deviation from the schedule shall be brought to the immediate attention of the Construction Manager.

Before work is started, the Contractor shall submit to the Construction Manager for approval a list of materials, with trade names, proposed to be furnished (4 copies) and shop drawings as requested by the

Construction Manager. Submittals shall be representative of materials to be used by the Contractor in completing his work.

1.3 Progress Payments: Prior to the start of work, the Contractor shall submit a complete payment breakdown to the Construction Manager. Payments will be made by the Owner in accordance with Article 9 of the General Conditions. The Contractor shall submit applications for payment on the forms prescribed and approved by the Owner as set forth in these specifications.

1.4 Materials Handling:

1.4.1 Delivery: The Contractor shall be responsible for all materials being delivered in manufacturer's original unopened containers with manufacturer's labels intact and legible.

1.4.2 Storage: Storage space for materials and equipment is considered limited and the Contractor will schedule deliveries to minimize space required for storage.

The Contractor shall place and store materials and equipment in spaces agreed upon by the Owner, Construction Manager, and Contractor. The contractor shall provide continuous protection against damage or loss.

1.4.3 Waste Materials: All waste materials shall be stored and removed from the site in a manner agreed upon by the Contractor, the Owner, and the Construction Manager daily. In the event material and debris are left at the site and not removed in accordance with the specifications, the Owner may remove the offending materials at the Contractor's expense. Please refer to Article 4 of the General Conditions concerning the Contractor’s disposal of waste material.

1.5 Special Conditions:

1.5.1 Visit to Site: The Contractor shall examine the drawings and specifications; must visit the site and note all field conditions which will influence the work required by his contract. The Contractor must verify the data noted in the drawings and specifications. He shall report any discrepancies between the bid documents and the field conditions to the Architect/Engineer/Construction Manager no later than five (5) days before the bids are due so that the Architect/Engineer/Construction Manager may issue clarification addenda if required. Failure to report any discrepancies within the time frame noted, will nullify any extra cost claim by the Contractor, if claim is based on discrepancies between specifications, drawings, and field conditions.

1.5.2 Protection: Contractor shall be responsible for the existing building, new work, new facilities, and improvements within the area where his work is being accomplished. Any damage to these resulting directly or indirectly from the Contractor's operations shall be promptly corrected at the Contractor's expense.

Provide all necessary temporary enclosures, covers, guardrails, barricades, safety devices, etc., to adequately protect all workmen and the public, especially children, from possible injury due to the various processes required to accomplish the work required. Provide all necessary temporary partitions, enclosures, and coverings for the confinement of dust, dirt, and debris.

Temporarily protect partially completed construction items such as structural steel, roof deck, roofing, insulation, exposed wall cavities, interior walls, etc., as needed to protect against weather damage.

1.5.2.1 The Contractor is responsible for maintaining all temporary emergency egress routes. The Contractor shall obtain approval from the Building and Fire Departments for all temporary emergency egress routes.

1.5.2.2 The Owner has the right to require disruptive work to be discontinued if affecting the students and staff. In such event, Contractor will perform the work during times and days when the Owner's operations will not be affected and at no additional cost to the Owner.

1.5.3 Security and Safety: The Contractor shall maintain adequate security at all times to protect the materials and work in place from damage, theft, malicious mischief and vandalism. The Contractor shall also observe and comply with all codes and regulations applicable to the safety of employees, tenants, and the general public. The Contractor, specifically, shall meet all requirements of OSHA as published in the Federal Register and procurable from the Government Printing Office, and the New York Department of Labor Safety Regulations as related to the construction work.

The Contractor shall meet all requirements of the Department of Health (DOH) and State and Federal guidelines preventing the spread of COVID-19 on the jobsite.

All work shall be performed with the safety of the building occupants, students, and staff taken into consideration.

1.5.4 Supervision: All work specified herein shall be carried out under the direction of the Construction Manager and with the approval of the coordinator of building services of the Owner with the least interference with the routine use of the building. All materials, equipment, etc., shall be stored where and as directed.

The coordinator of building services shall determine the compliance with the terms of this specification and any subsequent contract based upon same and his decision shall be final and conclusive as to the intent of the specifications and the sufficiency in quality and quantity of any work performed or material furnished in connection with the work covered by the specifications. The Construction Manager shall assist and advise the coordinator as necessary.

1.5.5 Installation: The complete installation shall be in accordance with the latest rules and regulations of the Boards and Departments having jurisdiction.

Any item or requirement necessary for a complete installation but not specifically described in this specification shall conform to the governing rules and regulations.

The Contractor shall procure all the necessary and usual certificates for all work installed by him and deliver same to the Architect and Construction Manager before final acceptance.

The Contractor is responsible for all rigging, scaffolding, and hoisting that is required in order to install the equipment as specified.

1.5.6 Existing Work: Existing work shall be cut, drilled, altered, removed or temporarily removed and replaced as necessary for the performance of the contract. However, unless otherwise provided by the specifications, no structural members shall be cut or altered without the authorization of the Engineer. Work remaining in place which is damaged or defaced by reason of work as done under this contract, shall be restored equal to its condition at the time of the award of this contract.

1.5.7 Existing Equipment: Equipment temporarily removed as a result of work under this contract shall be protected, cleaned, and replaced equal to its condition at the time of the award of this contract.

1.6 Coordination: All work shall be coordinated with the Owner, Architect, Engineer, and Construction Manager.

1.6.1 School Operations & Contractor Work Hours: During the Summer, work will be permitted between **7:00 a.m. and 4:00 p.m.** during the normal work days, Monday through Friday and Saturday as per local ordinances. However, when school is in session, work hours shall be from 3:00 p.m. to 11:00

p.m., Monday through Friday. All after hours work must comply with the allowable working hours and noise ordinance for the **Village of Mamaroneck**.
Each Prime Contractor may work Saturday & Sundays to make up for lost time (Saturday/Sunday work will be required if necessary to meet deadline) with prior approval from the Owner and after Contractor has verified allowable working hours by town ordinance. Contractors wishing to work on weekends or additional hours during the week shall pay for custodial hours related to same.

Consideration will be given to perform work DURING School Hours provided the area of work has a dedicated access route that does not interfere with the Students & Staff as well as NOT creating any noise in excess of 60dB as mandated by SED guidelines. After Horus work would also be required for any heavy construction work (i.e. piles, steel, etc.) that might pose a potential safety hazard to Students & Staff.

Due to extreme traffic congestion associated with student car and bus transportation, deliveries to any area of the project WILL NOT be allowed during school days from 8:00 a.m. to 9:00 a.m. and 2:00 p.m. to 3:30 p.m.

This Contractor will provide in their base bid five (5) “black out days”, to the construction schedule where no work can take place. These dates will be determined by the District and have been incorporated into the milestone dates indicated in the attached bid schedule.

The Contractor shall not interfere with the operation of existing essential services during all normal operating hours and periods. All work requiring temporary interruption of essential services shall be done only with the specific approval of the Construction Manager and Owner. The Contractor shall set up a schedule of work affecting existing services for approval by the Owner and the Construction Manager.

Separate access to the construction activities will have to be provided by the General Contractor, since school will be in session while part of the construction is on-going. The General Contractor will provide temporary stairs, scaffolding, doors, etc. to provide separate access for all trades to the construction areas.

1.6.2 School District Holidays: Coordinate with the District for access to work during school holidays as listed below. Hours of work to be from 7:00 a.m. to 4:00 p.m.

Labor Day
Rosh Hashanah
Yom Kippur
Columbus Day
Veterans’ Day
Thanksgiving
Winter Recess
Martin Luther King
Presidents’ Recess
Spring Recess
Memorial Day

1.6.3 School District Events: Coordinate with the District for access to work during days where there are no students present (Superintendent Conference Days, etc.). Hours of work to be determined by the owner for each day.

1.6.4 Exam/Testing Schedule: Coordinate with the District for access to work during days when testing will take place at the schools. Hours of work to be from 3:00pm – to 11:00pm (After Hours)

1.7 As-Builts: The Contractor (each prime contractor), upon completion of installation of work, shall provide the Owner with as-built drawings (4 copies) to be approved by the Design Architect or Engineer.

These drawings shall show the exact location and invert of all items installed and/or altered by the Contractor.

1.8 Time of Completion: The Contractor, prior to being awarded the contract, shall prepare and submit for the Construction Manager's and Owner's approval, a progress schedule for the work. The progress schedule shall be related to the entire project to the extent required by the contract documents. This schedule shall indicate the dates from the start of work to completion and shall be revised as required by the conditions of the work subject to the Construction Manager's approval. Any departure from the schedule shall be brought to the attention of the Construction Manager.

The Contractor in preparing his schedule shall comply with the requirements on Table 1-1 which lists the completion date from the contract award date.

Any objections by a prospective bidder to this time schedule shall be submitted in writing to the Engineer at least ten (10) calendar days before the date of the bid opening.

1.9 Liquidated Damages: This project is to be physically completed in accordance with the time limits set forth in the agreement between the Owner and Contractor and as further set in the project manual and/or bidding documents. Liquidated damages will be assessed in the amount of $1,000.00 for each and every calendar day after such time allowed for completion.

1.10 Insurance:

See Specification Section 007316 and General Conditions Article 10

1.11 Substitutes/Equivalents: Where two or more kinds, types, brands, manufacturers, or materials are named in these specifications, they are to be regarded as the required standard of quality and are presumed to be equal. The contractor may select one of these items or, if the contractor desires to use any kind, type, brand, manufacturer, or materials other than those named in the specifications, the contractor shall indicate in writing, when requested, and prior to the award of contract, what kind, type, brand, manufacturer or material is included in the base bid for the specified item.

1. Bidder must prove equivalence of substitution and furnish detailed specifications and catalog cuts or drawings. Failure to identify exceptions or deviations from equipment specified must be interpreted to indicate that the product offered complies with the specification in every respect.

2. Please refer to Article 6 of the General Conditions for additional information on equivalents and substitutions.

1.12 Guarantees:

1. Guarantees shall be furnished by all prime contractors for all labor and materials for a period of three (3) years as set forth in the General Conditions.

2. If guarantee/warranty periods are listed in individual technical sections, or any other Division 0 or 1 sections, the longer period shall be provided.

1.13 Communications: Should there be any problems with the contract in terms of working conditions, cooperation of the owner personnel, tenants, vandalism, job safety, stolen equipment and materials, unusual field conditions; the Contractor will immediately notify the Construction Manager and the owners representative in writing for resolution by the Owner.

1.14 Protection:

1. Provide all required protective measures for removal work. Give particular attention to the protection requirements so as to prevent any damage to existing construction or to adjoining public and private property, including thoroughfares. The Contractor will be held responsible and shall restore at his own expense any such damage to the complete satisfaction of the Construction Manager.

2. Protect adjoining public and private property, including thoroughfares, from damage due to disposal operations.
3. Protect from damage all heating, plumbing, and electrical lines to remain.

4. Take extreme care to protect the occupants of adjoining areas and prevent any harm to them through the required operations.

1.15 Indemnity:

1. Each prime contractor shall refer to Article 12 of the General Conditions.

1.16 Removal and Disposal of Debris:

1. Each prime contractor is responsible for removal from the building and off-site disposal of all rubble, trash, combustible materials and debris of all kinds created by and in the construction of this project. This includes all debris created by or connected with the operations of all contractors, sub-contractors and material suppliers engaged in the construction.

2. Each prime contractor shall pay all costs, fees, and permits attendant to the loading, unloading, cartage, dumping and disposal of all rubbish, and/or debris. No other contractor, sub-contractor, or material supply man shall be obliged to pay any costs attendant to this operation. The complete removal of all debris shall be performed with such frequency as to maintain the grounds around the building free from debris. Materials and debris removed will be loaded directly into waiting trucks or containerized vehicles so as not to litter the adjacent grounds.

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

4. Areas designated by Construction Manager will be the only place the contractor will be allowed to load and off load usable materials and/or debris. He shall at no time block the fire exists of the building. He will further repair any damage done to the sidewalks, pavements, and lawn areas upon completion of the project.

1.17 Ingress, Egress, and Circulation: Each prime contractor shall be responsible for performing his construction activities in such manner to maintain essential ingress and egress for visitors and occupants of Owner-occupied areas and to continuously maintain all required emergency exits from and circulation between existing facilities. Passageways for emergency exits shall be kept continuously free from debris, construction equipment, tools, stockpiles of materials, and other hazards to speedy evacuation. The contractor shall provide all necessary temporary work as prudence and good practice may dictate and in

accordance with Public Law, to obtain and maintain all such ingress, egress, and circulation requirements. All temporary work shall be removed when no longer required.

1.18 Non-Interference with Owner's Operations: Each prime contractor shall acquaint himself with the general character of the Owner's operations prior to commencing work and shall so schedule his work to avoid interference therewith. The sequence of demolition and removal operations shall be in accordance with a schedule of contract operations approved by the Owner and Construction Manager.

1.19 Sequence of Work:

1. An approved Sequence of Work will be established for the work of this project that will not interfere with the Owner's operations. The Sequence of Work may be modified from time to time by the Owner if changes in his schedule of activities require it.

2. The Owner will occupy the existing building and the outdoor facilities during normal business hours and also for after hours activities.

3. Emergency exit ways shall be kept clear at all times that people are in the building.

1.20 Final Cleaning Up:

1. Just prior to the Architect, Engineer and Construction Manager's inspection tour to establish the date of Substantial Completion, Contractor shall do final cleaning of materials and equipment installed under the contract.

2. The Contractor shall restore the areas of the building or the site, damaged by his work, to its original condition.

3. Contractor shall be responsible for the proper cleaning of all equipment furnished under this contract and for the removal of rubbish, packing cases and debris.

1.21 Storage: Storage space for materials and equipment is considered limited and the Contractor will schedule deliveries to minimize space required for storage.

The Contractor shall place and store materials and equipment in spaces agreed upon by the Owner, Construction Manager, and Contractor. The Contractor shall provide continuous protection against damage or loss.

1.22 Reserved

1.23 Engineer’s Inspections: Accommodate Engineer’s inspections by providing manpower, equipment, etc. as required by the inspector. Assist the inspector as requested.

1.24 Contract Location:

Mamaroneck Avenue School
850 Mamaroneck Avenue
Mamaroneck, NY 10543

1.25 Installation: The complete installation shall be in accordance with the latest rules and regulations of the Boards and Departments having jurisdiction.

Any item or requirement necessary for a complete installation but not specifically described in this specification shall conform to the governing rules and regulations.

Each prime contractor shall procure all the necessary and usual certificates for all work installed by him and deliver same to the Construction Manager before final acceptance.

Each prime contractor is responsible for all rigging, scaffolding, and hoisting that is required in order to install the equipment as specified.

1.26 Code Requirements: All work performed, and materials furnished, shall be done in strict accordance with current requirements of the State and local codes as may apply including all revisions and authorized standards to date. The following is a partial list of applicable codes:

1. 2015 International Existing Building Code (as adopted by New York State)
2. 2015 International Building Code (as adopted by New York State)
3. 2015 International Mechanical Code (as adopted by New York State)
4. 2015 International Plumbing Code (as adopted by New York State)
5. 2015 Energy Conservation Code (as adopted by New York State)
6. 1998 NYSED Manual of Planning Standards
7. National Electric Code (NEC)
8. National Fire Protection Association (NFPA)
9. ICC/ANSI A117.1 - 2009 American National Standard

1.27 Permits and Inspections: Each prime contractor shall obtain and pay for any necessary Municipal or State inspection and permit as required by the inspection authority, and make such tests as are called for by the regulations of such authorities. These tests shall be made in the presence of such authorities or their authorized representative.

1.28 Shop Drawings, Product Data, and Samples:

1. Work Included:

   a. Submit to Construction Manager, all shop drawings, product data, and samples as required by these specification sections.

   b. Designate construction schedule dates for submission, and dates shop drawings reviewed, product data and samples will be needed for each product.

   c. Contractor must stamp all submittals with "approval stamp" before submitting to the Construction Manager/Architect.

2. All submissions shall be sent electronically in pdf format directly to the Architect/Engineer copying the Construction Manager. Submissions will be either via email or a data sharing website. The **Submittal Exchange** website service designed specifically for transmitting submittals between construction team members may also be used for this project (www.submittalexchange.com). If so, the costs for this service will be paid for by the School District and log in credentials will be assigned to the Prime Contractors.

3. Shop Drawings:

a. Original drawings prepared by Contractor, Sub-Contractor, supplier or distributor, which show some portion of the work, showing fabrication, layout, setting, or erection of details.

b. Prepared by qualified details.

c. Identify details by reference.

4. Product Data:

a. Manufacturer's Standard Schematic Drawings:

1. Modify drawings to delete information which is not applicable to the project.
2. Supplement standard information to provide additional information applicable to project.

b. Manufacturer's catalog sheets, brochures, diagrams, schedules, performance charts, illustrations and other standard descriptive data.

1. Clearly mark each copy to identify pertinent materials, products or models.
2. Mark each item with the appropriate specification reference.
3. Show dimensions and clearances required.
4. Show performance characteristics and capacities.
5. Show wiring diagrams and controls.
6. Indicate any deviations for characteristics specified clearly.

5. Samples:

a. Where called for in specifications or required by Architect/Engineer, provide physical examples to illustrate materials, equipment or workmanship and to establish standards by which completed work is judged.

b. Provide office samples of sufficient size and quantity to clearly illustrate:

1. Functional characteristics of products or material with integrally related parts and attachment devices.
2. Full range of color samples.
3. After review samples may be used in construction of the project.

c. Clearly identify each sample with appropriate specification reference and clearly indicate any deviation from specification.

6. Contractor's Responsibilities:

a. Review shop drawings, product data, and samples prior to submission, make certain that items conform to specifications and requirements of work, and so certify when submitting items for approval.

b. Verify:

1. Field measurements;
2. Field construction criteria;
3. Catalog numbers and similar data.

c. Coordinate each submittal with requirements of work and of contract documents.

d. Contractor's responsibility for errors and omissions in submittals is not relieved by Architect/Engineer's review of the submittals.

e. Contractor's responsibility for deviations in submittals from requirements of contract documents is not relieved by Architect/Engineer's review of submittals, unless Architect/Engineer's deviations are identified by contract at time of submission.

f. Notify Architect/Engineer's, in writing, at the time of submissions or deviations in submittals from requirements of contract documents.

g. Begin no work which requires submittals until return of submittals with Architect/Engineer's stamp and initials or signature indicating review.

h. After Architect/Engineer's review distribute copies, as needed.

6. Submission Requirements:

a. Submittal schedule for shop drawings, product data, and samples shown:
   1. Date of Contractor's submittals;
   2. Date of Contractor's resubmittals;
   3. Date of approval;
   4. Date of release of work or purchase order.

b. Schedule submissions at least fifteen (15) days before dates reviewed submittals will be needed.

c. Submit number of samples specified in each of these specification sections.

d. Accompany submittals with transmittal letter in duplicate, containing:

   1. Date;
   2. Project title and number, and contract number;
   3. Contractor's name and address;
   4. Number of each shop drawing, product data, and sample; and quantity of drawings submitted;
   5. Notification of deviations from contract documents;
   6. Other pertinent data.

e. Submittals shall include:

   1. Data and revision dates;
   2. Project title and number;
   3. The names of:
      a. Architect/Engineer
      b. Construction Manager
      c. Contractor
      d. Subcontractor
      e. Supplier
      f. Manufacturer
      g. Separate details, when pertinent.
   4. Identification of product or material;
   5. Relation to adjacent structure or materials;

6. Field dimensions, clearly identified as such;
7. Specification section numbers;
8. Applicable standards, such as ASTM number or Federal Specification;
9. Identification of deviation from contract documents;
10. Contractor's stamp, initialed or signed, certifying to review of submittal; verification of field measurements and compliance with contract documents.

7. Engineer's Review:

a. Engineer's will review and stamp submitted shop drawings and other submissions in one (1) of the following ways:

1. "NO EXCEPTIONS TAKEN": Submission is in full compliance with all contract documents, or indicated deviations are acceptable.
2. "MAKE CORRECTIONS NOTED": Submission has minor corrections not significant enough to require resubmission; noted corrections must be made in the final installation.
3. "REJECTED": Submission does not meet contract requirements; resubmission of shop drawings, which meet contract requirements, is required.
4. "AMEND AND RESUBMIT": Resubmission is required due to the nature and/or number of corrections.

b. Work shall be executed in accordance with "No Exception Taken" or "Make Corrections Noted" drawings only.

c. Engineer's approval is for conformity to design requirements and arrangement only. Contractor is responsible for quantity, dimension, accuracy of fit, and coordination with other trades. Approval is subject to all contract requirements and does not authorize any changes involving additional costs, unless stated in a separate letter or change order.

8. Resubmission Requirements:

a. Shop Drawings:

1. Revise initial drawings, as required, and resubmit, as specified to initial submittal;
2. Indicate on drawings any changes which have been made, other than those requested by the Engineer;
3. Submit new product data and samples, as required on initial submission.

9. Distribution of Submittals After Review:

a. Distribute copies of shop drawings and product data which carry Engineer's stamp to:

1. Contractor's File;
2. Job Site File;
3. Record Document File;
4. Sub-Contractors;
5. Supplier;
6. Fabricator.

b. Distribute samples as directed; remove from site if so placed or incorporated in finished work when permitted by Architect/Engineer.

1.29 Schedule of Values:

1. Work Included:

a. Submit to Construction Manager the Schedule of Values, within seven (7) days after award of contract.

b. Upon request of Construction Manager, support values given with data that will substantiate their correctness.

c. List quantities of materials specified under unit price allowances.

d. Payment for materials stored on site will be limited to those materials listed in Schedule of Unit Material Values.

e. Use Schedule of Values only as basis for Contractor's Application for Payment.

2. Submittals:

a. Form and Content:

1. Submit typewritten Schedule of Values on AIA G702a.
2. Use Table of Contents of these specifications as basis for format of listing costs of work for sections under divisions applicable to contract.

3. Identify each line item with section number and title, as listed in Table of Contents of these specifications.

3. Preparation:

a. Itemize separate line item cost for each of the following general cost items:

1. Insurance, performance, and payment bonds;
2. Field supervision and layout;
3. Temporary facilities and controls;
4. Mobilization;
5. Performance testing (not less than 10% of value of equipment/system being tested);
6. Allowances.

b. Payment for field supervision, layout, temporary facilities, and controls will be made monthly as a percentage of project completion corresponding directly to the percent of total dollar value of the work owed (does not include retainage).

c. Itemize separate line item cost for work required by each section of these specifications.

d. Provide line item for each major component of work for which contractor will require partial payment or where so requested by the Construction Manager.

4. Review and Submittal:

a. After review by Architect/Engineer, Construction Manager, and Owner, revise and resubmit schedule, as required.

b. Schedule of Value(s) which are "front-loaded" will be rejected.

1.30 Project Coordination: Wherever the term, "General Construction Contractor" is used herein, it is intended to mean either the Contractor for the General Construction whenever separate prime contracts are involved, or the Sole Contractor if there are no other prime contractors engaged on the project.

Wherever separate contracts are awarded to separate Prime Contractors for the different branches of the work, each Prime Contractor shall cooperate with the other trades to ensure that the work progresses as required by the contract documents, so that no portion of the work is delayed or not properly undertaken due to such lack or failure of cooperation. Each Prime Contractor shall have at least one (1) full-time Project Manager assigned to the project. The Project Manager shall attend each Progress Meeting at the site.

Contractors shall lay out and install their work at such time or times and in such manner as to facilitate the general progress of the project.

1.30.1 Items noted NIC (Not in Contract), will be supplied and installed by Owner

1.30.1.1 For Owner installed products, the Owner's responsibilities are as follows:

1. Provide reviewed shop drawings, product data, and samples, to the Contractor responsible for installation or coordination.

2. Provide product delivery to the site.

3. Arrange for manufacturers' warranties, inspections, and service.

4. Arrange for product installation.

1.30.1.2 For Owner installed products, the Contractor’s responsibilities are as follows:

1. Review Owner provided shop drawings, product data, and samples for coordination purposes.

2. Receive and install product, if required by the Project Documents.

3. Notify the Owner of any discrepancies between the Contract Documnts and the product which is to be provided.

1.31 Cut-Overs, Interruptions to Existing Buildings: All cut-overs of mechanical and electrical services to existing buildings shall be scheduled and coordinated in advance with the A/E and done at a time convenient to the Board of Education so as not to unreasonably interfere with its operations.

1.32 Control Wiring: The Prime Contractor who furnishes and installs mechanical equipment, including but not limited to heating, ventilating, and air conditioning systems; ATC systems; boilers, remote monitoring systems; and so forth, which systems require electrical control wiring, shall include the cost of all such control wiring and its installation in his proposal.

Control wiring must connect to a point of electrical power supply as shown in the contract documents. (Power wiring and supply shall be provided by the Electrical Contractor.)

1.33 Openings, Channels, Cutting and Patching: Refer to Specification Section 011200 – Special Provisions.

1.34 Grade Lines and Levels: The General Construction Contractor shall be responsible for locating and laying out the building and all its parts on the site, in strict accordance with the contract documents, and shall accurately establish and maintain dimensional control. He shall employ and pay for the services of a competent and licensed New York Engineer or Land Surveyor (who shall be approved by the A/E to perform all layout work, and to test the levels of evacuations, footing base plates, columns, walls and floor and roof lines, and furnished the A/E as work progresses, certificates that each of such levels is as required by the contract drawings. The plumb lines of walls, etc. shall be tested and certified by the surveyor as the work progresses.

The Engineer or Surveyor, in his layout work, both on the site and within the building shall establish all points, lines, elevations, grades, and bench marks for proper control and execution of the work. He shall establish a single permanent bench mark as directed to which all three coordinates of dimensional control shall be referred. He shall verify all contract-furnished topographical and utility survey data and all points, lines, elevations, grades, and bench marks; should any discrepancies be found between information given on contract drawings and the actual site or field conditions, the General Contractor shall notify the A/E of such discrepancy, and shall not proceed with any work affected until receipt of written instructions from the A/E.

1.34.1 The General Construction Contractor will employ a Land Surveyor, registered in the State of New York and acceptable to Architect, to perform survey work of this section. Submit evidence of Surveyor's errors.

1.35 Regulatory Requirements: All general construction, plumbing, heating, and electrical work is to be done in accordance with the New York State Building Code. No work requiring inspections and approvals of construction code officials is to be covered or enclosed prior to inspection and approval by appropriate code enforcement officials.

Prior the start of any crane equipment operations, each contractor shall make all necessary applications and obtain all required permits from the Federal Aviation Administration (FAA). The sequence of operations, timing and methods of conducting the work shall be approved by the FAA to the extent that it relates to their jurisdiction.

1.36 Construction Progress Schedule: The contract shall be completed within the specified number of calendar days from the date a Notice to Proceed is issued.

Single Prime Project:
The Prime Contractor shall be responsible for preparing and furnishing to the Construction Manager/Architect for his approval, which must be approved, before submission of the first monthly estimate for payment, a Progress Schedule. The schedule shall be in the form of an arrow network diagram, bar chart, or other graphic Progress Schedule in sufficient detail to satisfy the Construction Manager.

Multiple Prime Project:
Each Prime Contractor shall be responsible for preparing and furnishing to the Construction Manager for his approval, which must be approved, before submission of the first monthly estimate for payment, a Progress Schedule. The schedule shall be in the form of an arrow network diagram, bar chart, or other graphic Progress Schedule in sufficient detail to satisfy the Construction Manager.

Each individual draft schedule shall be combined into a Single Coordinated Progress Schedule by the Construction Manager for final review and coordination with each Prime. Monthly estimates will not be processed by the Board of Education until and unless a single coordinated progress schedule shall have been submitted and approved.

The Progress Schedule based upon the contractor's logic and time estimates shall indicate in suitable detail for display, all significant features of the work of each contractor, including the placing of materials orders and anticipated delivery dates for long lead items, submissions and approvals of shop drawings, all work activities to be performed by each contractor and the beginning and time durations thereof and the dates of substantial and final completion of the various branches of the work.

Immediately upon such approval, the Construction Manger shall distribute the Progress Schedule to each Prime Contractor. The final coordinated Schedule shall be signed and dated by all the Prime Contractors involved.

Each Contractor shall furnish sufficient labor, construction plan, and equipment to insure the progress of the work in accordance with the Project Schedule. If the latest completion time for any significant job doesn't come within the time allowed by the Project Schedule, the sequence of the jobs and/or the time for performance of the jobs shall be revised through concurrent operations, additional manpower, additional shifts, overtime, etc., until it is assured that the Contract Completion Date will be met. No additional costs to the Board of Education will be allowed by the contractor(s) for overtime, additional manpower, equipment, additional shifts, etc. (except as may be provided elsewhere in the contract) if such expediting procedures or measures are necessary to meet the agreed completion date.

Each contractor agrees that he will make no claim for, and have no right to, additional payment or extension of time for completion of the work, or any other concession because of any interpretation or misunderstanding on his part of the Project Schedule and the manner in which it will be used on the project or because of any other contractor's failure properly to participate in the development of a schedule or to perform his contract in accordance with the schedule.

1.37 Temporary Construction Facilities: Each prime contractor will provide, on site, and maintain during the project construction, a suitable weather-tight insulated field office conveniently located for reception and continuous use and shall maintain therein a complete set of Contract Documents including plans, specifications, CPM network diagrams, change orders, logs, and other details and correspondence. The field office shall contain approved and safe heating facilities and lighting, convenience outlets, fire extinguisher, minimum of two operating windows of 15 SF each, outside door, handle, hasp, and padlock. The field office may be removed upon enclosure of the building at a time directed by the contractor; contents and operations will be transferred to the interior of the project building by the general contractor and said offices shall be maintained by the general contractor until final acceptance of the project.

1.38 Temporary Water:

1. The Plumbing Contractor shall provide, protect and maintain an adequately controlled (valve) water supply to a convenient location for the use of all Contractors on the project during the period of construction, either by means of the permanent water supply line, or by the installation of a temporary water supply line. The water supply line shall be made available within fifteen (15) days after the written request has been made to the Plumbing Contractor by any Contractor requiring this service. Copies of the request will be sent to the Architect/Construction Manager and the Owner.

2. Temporary water will be provided by the Owner at no charge to the Contractor provided and to the extent it may be existing and available at the site immediately prior to

commencement of and during construction. It is the obligation of any Prime Contractor requiring temporary facilities to investigate and make specific arrangements with the Owner for such facilities and to include in his proposal the cost of any additional facilities he may require for proper conduct of his Work.

3. The Plumbing Contractor is responsible to protect all water lines from damage or freezing, be they permanent or temporary. Should water connections be made to an existing line, the Plumbing Contractor shall provide a positive shut off valve at his cost and expense.

4. If the Plumbing Contractor fails to carry out his responsibility in supplying of the water, as set forth herein, he shall be held responsible for such failure, and the Owner shall have the right to take such action as he deems proper for the protection and conduct of the Work and may deduct the cost involved in so doing from any sums due the Plumbing Contractor.

1.39 Temporary Light & Power:

1. Electrical Contractor shall extend electrical service to the building or buildings at locations approved by the Owner. Temporary electrical service shall be independent of the existing permanent service. Initial temporary service shall be three (3) phase or single phase depending upon closest availability to the project. Temporary light and power installations, wiring, and miscellaneous electrical hardware must meet the National Electric Code. This service shall be installed within fifteen (15) days after written request has been made to the Electrical Contractor by any Prime Contractor regarding such service (with copies to the Architect/Construction Manager and the Owner). When the Contract calls for three-phase permanent service, the Electrical Contractor shall install same within a reasonable time to permit use by any other prime contractors. Electrical characteristics shall be provided to meet all temporary light and power reasonably required as herein and hereafter specified or as included under Supplementary General Conditions. The Electrical Contractor shall provide the necessary distributing facilities and meter and shall pay the cost of running temporary services from the nearest utility company power pole. All costs shall be included in his bid.

2. The Electrical Contractor shall extend the service into the building and shall provide temporary receptacles and lighting as described hereinafter, and one (1) 5 H.P. 208 V, or 220 or 230 volts power outlet for each building and one separate power outlet for each Contractor for the proper conduct of this Work. Power outlets shall be fed independently of the temporary lighting system. Where service of a type other than herein mentioned is required, the Contractor requiring same shall install and pay all costs of such special service. The size and incoming service and main distribution switch and panel shall be sized as any service by NEC requirements.

3. The Electrical Contractor shall provide double sockets at a maximum of thirty (30) feet on centers in large areas. One socket shall contain a 150 watt lamp, and the other socket shall be a grounding type to accept a receptacle plug for small single-phase loads to be used for short periods of time. The Electrical Contractor shall provide double sockets of the type described above in all individual rooms, one (1) double socket for each 500 square feet or fraction thereof of room area (for example: a room 30' by 30' is equal to 900 square feet and would require two (2) double sockets).

4. The Electrical Contractor shall provide all electrical service for operation of elevator equipment during construction, as well as for permanent installation.

5. The General Construction Contractor shall pay for cost of all electric energy used on distribution lines installed by the Electrical Contractor until the project is accepted by the Owner. The Electric Contractor shall provide and pay for all maintenance, servicing, operation and supervision of the service and distribution facilities. He shall also connect, maintain, and service any electrical equipment installed by the Mechanical Contractor which may be necessary for maintaining heat whenever heat is required in the building whether from the temporary or permanent system.

6. Any Contractor who fails to carry out his responsibility in the supplying of uninterrupted light and power or other utility as set forth herein, shall be held responsible for such failure, and the Owner shall have the right to take such action as he deems proper for the protection and conduct of the work and shall deduct the costs involved from the amount due the Contractor at fault.

7. There shall be no additional cost to the Owner or other Prime Contractors because of standby requirements due to conflict in the normal working hours of the various trades. The Electrical Contractor shall provide temporary light and power to all trades during normal working hours of such trades. Where overtime work by any Contractor necessitates standby electricians or other trades, such Contractor shall be responsible for making appropriate arrangements, financial and otherwise, for such service at no cost to the Owner.

8. The Electrical Contractor shall observe the requirements of the Federal Occupational Safety and Health Act of 1970 with regard to temporary light and power.

1.40 Temporary Heat:

1. Prior to the building being enclosed by walls and roof, if the outside temperatures shall fall below 40°F, at any time during the day or night, and heat is required for work in progress or for its protection, the respective Contractors responsible for such phase of work shall furnish, at their expense, acceptable means to provide sufficient temporary heat to maintain a temperature of not less than 45°F for that portion of the work for which they are directly responsible.

2. Heating of field office, storage spaces, concrete and masonry materials and working area heating, as required, shall be provided by the responsible Contractors.

3. As soon as the Owner determines that the building or a major unit thereof is "generally enclosed" by walls and the roof, the responsibility of supplying working area heat shall rest with the General Construction Contractor. When the outside temperature falls below 40°F at any time during the day or night, the General Construction Contractor shall furnish sufficient heat by the use and maintenance of PL gas heaters or other acceptance means to maintain a temperature of not less than 45°F within the enclosed area of the building at all times and shall remove when no longer required. The General Construction Contractor will be held responsible for providing temporary heat for damages, as a result of freeze-ups, for a period which will extend sixty (60) days beyond the date of which the Owner determines that the building is temporarily enclosed (without the use of temporary enclosures or materials except in circumstances having the prior written approval of the owner). He shall remove soot, smudges, and other deposits from walls, ceilings, and all exposed surfaces, which are the result of the use of heating equipment, including the permanent heating system, during the period of its use for supplying heat. He shall not do any finish work until the areas are properly cleaned. The general Construction Contractor shall provide or arrange, at his expense, supervision of the heating equipment at all times which obligations shall commence sixty (60) days after the acknowledged permanent enclosure of the building or buildings, as confirmed by the

Owner. The General Construction Contractor shall furnish and pay for all fuel for heat required during the entire construction period.

4. The General Construction Contractor shall not assume that the permanent heating system or any part thereof will be available for furnishing of temporary heat during the period for which temporary heat is the responsibility of the General Construction Contractor. The General Construction Contractor's base bid price shall therefore include the cost of all equipment necessary for providing temporary heat as required under these specifications.

5. All heating equipment shall be NFPA approved and connected to approved flues to the atmosphere. Gas cylinders within the building shall not exceed 100 lbs. capacity, shall have interstate Commence Commission approval and shall be fitted with a permanent cap to protect the valve when not in use. Heaters shall be approved by a recognized testing laboratory and must be equipped with a positive shut-off safety valve. Cylinders and heaters shall stand at least 6 feet apart and be connected with two (2) braid neoprene hoses that will withstand 250 PSI test pressure.

6. Storage of cylinders within the building will not be permitted at any time. Fire extinguishers shall be provided by the General Construction Contractor on each floor where heaters are used, and the areas must be adequately ventilated.

7. Contractors responsible for providing temporary heat shall train at least two (2) dependable persons to oversee temporary heat operations.

8. For the purposes of establishing the beginning of the General Construction Contractors obligation to provide temporary heat, a building, or major unit thereof, shall be considered generally enclosed when (a) the exterior walls have been erected; (b) a temporary roof or permanent roof is installed and in watertight condition; (c) temporary or permanent doors hung and window openings are closed with either permanent or temporary weather-tight enclosures (cardboard or woven materials are not to be used; however, any impervious transparent material responsibly intended for such purpose is acceptable). A major unit of buildings as referred to herein shall be: (1) an entire separate structure, or (2) a fully enclosed wing which shall have a floor area equal to at least fifty percent (50%) of the total floor area of the project.

9. When the building or a major unit, including the boiler room area, is GENERALLY enclosed as herein defined and appropriate notice has been given, it shall be the obligation of the Owner, or his authorized representative, to so acknowledge at a job conference at the site. The minutes of said meeting shall contain acknowledgment. If the Architect/Engineer and the Owner concur that the building or major unit is properly GENERALLY enclosed, then at the date of the job conference at which notice was given, the supply of heat (INCLUDING COST OF FUEL) and the payment of cost of repair of damage created by freeze-up shall become the responsibility and obligation of the General Construction Contractor. Confirmation of the time that such responsibility and obligation becomes effective shall be incorporated in the minutes of the job conferences, as prepared by the Architect/Engineer. Copies of the minutes shall be sent to all Contractors engaged in the project, who shall give due attention to their obligations in this connection.

10. The General Construction Contractor shall continue to provide acceptable means of heat until the building is completed and the water systems have been drained down. The fuel shall be paid for by the General Construction Contractor regardless of who provides and maintains the heat of equipment.

11. The Owner reserves the right to permit the substitution of limited temporary enclosures in lieu of permanent construction for the attainment of a permanently tight building if such action is deemed by the Owner to be in he best interest of the project.

    This action will not be such as to create future jeopardy to the environmental integrity of the building as construction proceeds.

1.41 Reserved.

1.42 Temporary Toilet Facilities: The General Construction Contractor shall provide and pay for suitable temporary toilets, at an approved location on the site, prior to the start of any field work. They shall comply with State and Local laws. The General Construction Contractor will be responsible for maintenance, removal and relocation as described hereinafter.

Toilets shall be of the portable, chemical type, mounted on skids, with screened enclosures with doors, each having a urinal and water closet.

Each unit shall be serviced at least twice a week, including removal of waste material, sterilizing, recharging tank, refilling tissue holders, and thorough cleaning and scrubbing of entire interior which shall be maintained in a neat and clean condition.

Relocate facilities inside building and connect to water and sewer as soon as work will allow.

When toilets are connected to water and sewer lines, take precautions to preventing freezing.

Remove units from the site at completion of work when directed.

Workmen are NOT to use the finished bathroom and toilet facilities in the project buildings (reasonable steps must be taken by the General Construction Contractor to enforce this rule).

1.43 Temporary Enclosures: Whenever necessary, in order to maintain proper temperatures for the execution of the work, or for the protection thereof, the General Construction Contractor shall furnish and maintain temporary enclosures for all openings in exterior walls that are not enclosed with finishing materials. Temporary wood doors shall be provided at door openings.

1.44 Protection of Work and Property:

1. Safety Precautions and Programs: Each prime contractor shall be responsible, in cooperation and in coordination with the General Contractor, for initiating, maintaining, and supervising all safety precautions and programs in connection with the prime contractor's work. He shall designate a responsible member of his organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent, unless otherwise designated by the contractor in writing to the Construction Manager.

2. Safety of Persons and Property: Each prime contractor shall take all reasonable precautions for the safety of, and shall provide all reasonable protection to prevent damage, injury or loss to:

    a. Every employee on the work and all other persons who may be affected thereby;

b. All the work and all the materials and equipment to be incorporated therein, whether in storage on or off the site, under the care, custody or control of the contractor or any of his subcontractors, or lower tier subcontractors; and

c. Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation or replacement in the course of construction.

The contractor shall give all notices in writing, and comply with all applicable laws, ordinances, rules, regulations, lawful orders and implementing guidance of any governmental entity, agency, or public authority bearing on the health or safety of persons or property or their protection from damage, injury or loss.

The contractor shall erect and maintain, as required by existing conditions and progress of the work, all reasonable safeguards for safety and protection, including rails, night-lights, the posting of danger signs, and other warnings against hazards, promulgating safety regulations, notifying owners and users of adjacent utilities and other means of protection against accidental injury or damage to persons or property.

When the use or storage of explosives or other hazardous materials or equipment is necessary for the execution for the work, the contractor shall exercise the utmost care and shall carry on such activities under the supervision of properly qualified personnel.

No contractor shall load or permit any part of the work to be loaded so as to create a safety hazard.

The contractor shall promptly remedy all damage or loss to any property caused in whole or in part by the contractor, any of his subcontractors, sub-subcontractors, suppliers, or anyone directly employed or engaged by any of them, or by anyone whose acts any of them may be liable and for which the contractor is responsible. The foregoing obligations of the contractor are in addition to his obligations as stated elsewhere herein.

1.44.1 The Owner may maintain security for their sole benefit. It is the responsibility of the Contractor to provide security and or protection of their work until the Owner accepts such work.

1.44.2 The Contractor is responsible for the furnishing, installation, maintenance and removal of safety, fall and opening protection, etc., associated with their work. The Contractor shall furnish, install, maintain and remove all perimeter protection cable in full compliance with OSHA standards at all elevated areas, including the roof level.

1.44.3 The Contractor is responsible for the removal and immediate replacement, at the conclusion of their work, of all temporary protection measures as required in order to facilitate their work. No fall or opening protection shall be removed until the progress of the permanent work is installed in a manner that results in no hazard to any party.

1.44.4 The installation of all barricades, enclosure, temporary partitions and other protective measures shall be performed in full compliance with the requirements of the New York State Department of Labor, OSHA regulations and all other applicable Federal, State and Local laws.

1.45 Emergencies: In any emergency affecting the safety of persons or property, the contractor shall act with diligence, at his discretion, to prevent threatening injury, damage, or loss. In such case, he shall immediately notify the Board of Education and Construction Manager of the action taken and shall forthwith prepare and submit a detailed and documented report to the Board of Education and Construction Manager.

Wherever the contractor has taken no action but has notified the Board of Education and the Construction Manager or wherever the Board of Education and Construction Manager has otherwise been made aware

of any emergency threatening injury to persons, or loss or damage to the work, or to adjacent property, the contractor shall act only as instructed or authorized by the Board of Education or Construction Manager.

1.46 Temporary Drives, Walks, and Parking Areas: The General Construction Contractor shall be responsible for keeping all roadways, drives, and parking areas within or proximate to the site free and clear of debris, gravel, mud, or any other site materials by insuring that all measures reasonably necessary are taken to prevent such materials from being deposited on such surfaces including, as may be appropriate, the cleaning of vehicle wheels, etc. prior to their leaving the construction site. Should such surface require cleaning, the General Construction Contractor will clean these surfaces without additional cost to the Board of Education. The General Construction Contractor will be held accountable for any citations, fines, or penalties imposed for failure to comply with local rules and regulations.

Should the General Construction Contractor elect to commence construction of permanent driveways, parking areas, or walks, other than general grading of temporary shop areas, he shall not do so without the approval of the A/E. He shall not do so without having prepared the subgrade, as may be elsewhere required by the Specifications, nor will he be relieved from any responsibility for providing additional materials or of reworking the subgrade prior to completion, if so required to make the improvements conform fully with the specifications.

1.47 Temporary Controls:

1. Dust Control - The General construction Contractor, at his expense, shall provide and maintain necessary temporary dustproof partitions around areas of work in any existing building or in new building areas as directed by the Construction Manager.

2. Pollution Control - All sewage disposal work shall conform with the regulations of the State of New York Department of Environmental Protection.

3. Erosion Control - Soil conservation measures are to be in accordance with the Soils Conservation District requirements.

4. Haul Routes:

   a. The General Construction Contractor shall be responsible for providing and maintaining unobstructed traffic lanes on the designated Construction Access Routes either shown on the contract drawings or reasonably required so as to perform the work and shall provide and maintain all reasonable required safety devices. He shall provide the addition of material, their grading and compaction, the removal of snow and debris so as to provide and maintain the general serviceable condition of the access roadbed, as well as pedestrian ways.
   b. The General Construction Contractor shall obtain permission, in writing, from the A/E before using any existing driveway or parking areas not specifically designated for such use in the Contract Documents for construction purposes. He shall maintain such driveways and areas in good condition during the construction period, and completing of the project, shall leave them in the same condition as the start of the work. Conditions before use should be carefully photographed or documented by the Contractor.

1.48 Testing of Mechanical and Electrical Systems: When mechanical, electrical, or other equipment is installed, it shall be the responsibility of the installing Contractor to operate it for such period of time as may be required for the proper inspecting and testing of the equipment and for instructing the Board of

Education's operating personnel. All tests shall be conducted in the presence of, and upon timely notice (three (3) working days) to the A/E prior to acceptance of the installation.

If the Architect/Engineer determines that any work requires special inspection, testing or approval, not otherwise required herein, he will, instruct the Contractor to order such special inspection, testing or approval, and the Contractor shall give a three (3) work day notice. If such special testing or inspection reveals a failure of the work to comply with the requirements of the Contract, the Contractor shall bear all costs thereof.

1.49 Final Clean Up: In addition to those responsibilities addressed in the General Conditions, the Contractor shall:

1. Remove all debris and rubbish resulting from or relating to his work. Rubbish shall not be thrown from building openings above the ground floor unless contained within chutes;

2. Remove putty stains from glass and mirrors; wash and polish inside and outside;

3. Remove marks, undesirable stains, fingerprints, other soil, dust or dirt from painted, decorated or stained woodwork, plaster or plasterboard, metal acoustic tile and equipment surfaces;

4. Remove spots, paint and soil from resilient, glazed and unglazed masonry and ceramic flooring and wall work;

5. Remove temporary floor protections, clean, wash or otherwise treat and/or polish, as directed, all finished floors;

6. Clean exterior and interior metal surfaces, including doors and window frames and hardware of oil stains, dust, dirt, paint and the like, polish where applicable and leave without fingerprints or blemishes; and

7. Restore all landscaping, roadway and walkways to preexisting condition. Damage to trees and plantings shall be repaired in the next planting season, and such shall be guaranteed for one year from date of repair and/or replanting.

1.50 Reserved:

1.51 Permits: Construction permits have been issued to the owner. The owner will forwarded a copy to the Contractor and Construction Manager so that they can be posted before any work can begin.

1.52 Possible Asbestos Containing Materials: There may be some areas where asbestos containing building materials may exist (i.e. floor tile, plaster walls, ceiling tile, etc.) and could possibly be disturbed during construction of this project. The contractor shall review the Asbestos Management Plan for each building before any construction starts. The Asbestos management Plan is located at the main office of each school and identifies areas where asbestos containing building materials are located. Should ether be an area where asbestos containing building materials must be disturbed, the contractor shall notify the Owner immediately. Do not start work. Asbestos material disturbance will be addressed by the Owner, unless the removal is specifically included in the scope of work of this contract.

1.53 Lead Base Paint: All contractors shall be made aware that some of the walls and ceilings that are painted and are required to be disturbed may contain lead base paint. The contractor shall follow safe

work practices with regard to removing any lead based paint from these areas. Please refer to Section 02831 for General Procedures required for any activities that would affect the lead based paint.

Pursuant to 40 CFR Part 745, all firms performing renovation, repair and painting projects in target housing must be certified with the EPA to conduct lead-based paint activities and/or renovations prior to disturbing any areas where lead-based paint has been identified, or where the painted surface(s) has not already been determined to be lead free by an EPA-certified lead inspector/risk assessor.

1.54 Use and/or Storage of "Hazardous Substances": The contractor is to notify the owner of any "Hazardous Substances" to be used/stored on site during construction at the Pre-Construction Meeting. This notification shall include a "Hazardous Substances Fact Sheet" as prepared by the Department of Health and Senior Services.

Should the need for the use of a hazardous substance arise during construction, the contractor is to utilize the following procedure:

1. If the school is occupied, notice is to be given to the owner of the need for a hazardous substance a minimum of two (2) weeks prior to its arrival on site. A "Hazardous Material Fact Sheet" is to be submitted at that time for each substance to be used. Also, a notice indicating the type(s) of hazardous substance(s) to be used is to be posted within the school a minimum of two (2) days prior to its arrival on site.

2. If the school is not to be occupied within 24 hours of use, notice is to be given to the owner and a notice posted within the school (as per the description above) a minimum of two (2) days prior to the arrival of hazardous substances on site.

The above procedures are as per Act No. 246 of the State of New York, PL 1997, c.364.

1.55 Uniform Safety Standards for School Construction & Maintenance Projects:

1. "The occupied portion of any school building shall always comply with the minimum requirements necessary to maintain a Certificate of Occupancy."

2. Indication that all school areas to be disturbed during renovation or demolition have been or will be tested for lead and asbestos. Note, the project folder should contain a letter regarding the presence of asbestos.

3. "General Safety and security standards for construction projects.

    a. All construction materials shall be stored in a safe and secure manner.

    b. Fences around construction supplies or debris shall be maintained.

    c. Gates shall always be locked unless a worker is in attendance to prevent unauthorized entry.

    d. During exterior renovation work, overhead protection shall be provided for any sidewalks or areas immediately beneath the work site or such areas shall be fenced off and provided with warning signs to prevent entry.

    e. Workers shall be required to wear photo-identification badges at tall times for identification and security purposes while working at occupied sites."

4. “Separation of construction areas from occupied spaces. Construction areas which are under the control of a contractor and therefore not occupied by district staff or students shall be separated from occupied areas. Provisions shall be made to prevent the passage of dust and contaminants into occupied parts of the building. Periodic inspection and repairs of the containment barriers must be made to prevent exposure to dust or contaminants. Gypsum board must be used in exit ways or other areas that require fire rated separation. Heavy duty plastic sheeting may be used only for a vapor, fine dust, or air infiltration barrier, and shall not be used to separate occupied spaces from construction areas.

    a. A specific stairwell and/or elevator should be assigned for construction worker use during work hours. In general, workers may not use corridors, stairs, or elevators designated for students or school staff.

    b. Large amounts of debris must be removed by using enclosed chutes or a similar sealed system. There shall be no movement of debris through halls of occupied spaces of the building. No material shall be dropped or thrown outside the walls of the building.

    c. All occupied parts of the building affected by renovation activity shall be cleaned at the close of each workday. School buildings occupied during a construction project shall maintain required health, safety and educational capabilities at all times that classes are in session.”

5. A plan detailing how exiting required by the applicable building code will be maintained is not applicable for this project.

6. A plan detailing how adequate ventilation will be maintained during construction is not applicable for this project.

7. “Construction and maintenance operations shall not produce noise in excess of 60 dba in occupied spaces or shall be scheduled for times when the building or affected building spaces are not occupied or acoustical abatement measures shall be taken.”

8. “The contractor shall be responsible for the control of chemical fumes, gases, and other contaminates produced by welding, gasoline or diesel engines, roofing, paving, painting, etc. to ensure they do not enter occupied portions of the building or air intakes.”

9. “The contractor shall be responsible to ensure that activities and materials which result in “off-gassing” of volatile organic compounds such as glues, paints, furniture, carpeting, wall covering, drapery, etc. are scheduled, cured or ventilated in accordance with manufacturers recommendations before a space can be occupied.

10. “Large and small asbestos abatement projects as defined by 12NYCRR56 shall not be performed while the building is occupied.” Note, it is our interpretation that the term “building”, as referenced in this section, means a wing or major section of the building that can be completely isolated from the rest of the building with sealed noncombustible construction. The isolated portion of the building must contain exits that do not pass through the occupied portion and ventilation systems must be physically separated and sealed at the isolation barrier.

    Exterior work such as roofing, flashing, siding, or soffit work may be performed on occupied buildings provided proper variances are in place as required and complete isolation of ventilation systems and at windows is provided. Care must be taken to schedule work so that classes are not disrupted by noise or visual distraction.

11. Surfaces that will be disturbed by reconstruction must have a determination made as to the presence of lead. Projects which disturbed surfaces that contain lead shall have in the specifications a plan prepared by a certified Lead Risk Assessor or Supervisor which details provisions for occupant protection, work site preparation, work methods, cleaning and clearance testing which are in good accordance with the HUD Guidelines.

END OF SECTION 010000

TABLE 1-1

LIQUIDATED DAMAGES

MAMARONECK UNION FREE SCHOOL DISTRICT

Contract No's.	Description	Contract Start Date	Construction Start Date	Construction Completion Date	Liquidated Damages $/Calendar Day
#2a-d	Capital Improvements at Mamaroneck Avenue School	Notice to Proceed	June 29, 2021	See Spec. Section 011200 for Milestone Schedule	$1,000.00

SECTION 010101 – MULTIPLE CONTRACT SUMMARY

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

A. This summary is provided as a reference for the bidders. However, such summary shall not relieve the bidder of its obligation to review the contract documents for a complete picture of the work and the requirements that must be adhered to in the performance of the work.

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

1.02 WORK COVERED BY CONTRACT DOCUMENTS

A. Project Identification: Capital Improvements at Mamaroneck Ave. School

1. Project Location: 850 Mamaroneck Avenue, Mamaroneck, NY 10543

2. Owner: Mamaroneck Union Free School District.

B. Architect Identification: The Contract Documents, dated January 10, 2020 were prepared for Project by LAN Associates, 252 Main Street, Goshen, NY 10924

C. Construction Manager: Triton Construction, 1279 Route 300 1st Floor , Newburgh, NY , 12550 has been engaged as Construction Manager for this Project to serve as an advisor to Owner and to provide assistance in administering the Contract for Construction between Owner and each Contractor, according to a separate contract between Owner and Construction Manager.

D. The Work consists of the construction of various capital improvements for the Mamaroneck Union Free School District.

1. The Work includes, but is not limited to, sitework, architectural, structural, masonry asbestos & lead, foundations, interior walls, floor and ceiling finishes; windows and doors; casework, mechanical, electrical and plumbing work as shown in the Contract Documents.

2. All materials, assemblies, forms and methods of construction and service equipment shall comply with the requirements of the latest edition of the New York State Building Code.

1.03 CONTRACTOR'S DUTIES

A. Except as specifically noted, provide and pay for:

1. Labor, materials, and equipment;
2. Tools, construction equipment, and machinery;
3. City water, heat, utilities, etc. required for construction;
4. Other facilities and services necessary for proper execution and completion of work.

B. Secure and pay for, as necessary, proper execution and completion of work, and as applicable, at time of receipt of bids:
1. Permits;
2. Government Fees;

3. Licenses;
4. Inspections of all work.

C. Give required notices to all governmental agencies and utilities;

D. Comply with laws, codes, ordinances, regulations, rules, orders, and other legal requirements of any governmental entity, agency, or public authorities which bear on the performance of work.

E. Promptly submit written notice to Engineer of observed variance of Contract Documents from legal requirements:

1. This observation should be presented prior to award of contract.
2. Appropriate modification to Contract Documents will adjust necessary changes;
3. Assume responsibility for work known to be contrary to such requirements when above notice has not been given.

F. Owner is exempt from sales tax:

1. Obtain sales tax exemption certificate from Owner;
2. Put exemption certificate number on invoices for material incorporated in work;
3. Upon completion of work, file with Owner notarized statement that all purchase made under exemption certificate were entitled to be exempt;
4. Pay legally assessed penalties for improper use of exemption certificate number.

1.04 DRAWINGS INCLUDED IN CONTRACT DOCUMENTS

A. Refer to List of Drawings located on Title Sheet of the Drawings.

1.05 CONTRACTS

A. The owner will award the following Construction Contracts for the Project in order to complete all work as indicated and specified:

- Contract 2a General Construction Contract
- Contract 2b Mechanical Contract
- Contract 2c Plumbing Contract
- Contract 2d Electrical Contract

B. In each case, the Contractor agrees to accept the site, as it exists and to remove any encumbrances, which interfere with proper fulfillment of the Work, without change in the Contract Sum.

C. Accommodate the Owner's intention to continue occupancy in the existing building, including site and to conduct normal school operations during the time of construction of the work.

1. Cooperate with the Owner's personnel in maintaining and facilitating access to the school building and its facilities by school personnel, school staff, and the public, while construction is still in progress.
2. Emergency access at driveways and building entrances: Keep driveways and entrances serving the occupied school building clear and available to the Owner, the Owner's employees and the public, and to emergency vehicles at all times. Do not obstruct access to these areas or use such areas for parking, construction equipment or storage of materials.

3. Schedule construction operations so as to minimize conflicts with and interruptions to daily school function. Coordinate necessary interruptions with Owner's personnel.

4. The existing building must remain operational at all times, therefore the Contractors are responsible to maintain all systems such as but not limited to fire alarm, clocks, public address system, electric, gas services, heat, etc.

D. The Contractor shall cooperate with separate Contractors for any separate Contracts that the Owner may award. This includes other prime contracts of this project as well as any other contracts the owner awards that may be occurring simultaneous to this project.

1.06 MULTIPLE PRIME CONTRACTS

A. The Project will be constructed under a multiple prime-contracting agreement. Prime Contracts are separate contracts between the Owner and separate contractors, representing significant construction activities. Each prime contract is performed concurrently with and closely coordinated with construction activities performed on the Project under other prime contracts. Prime Contracts for this Project include:

- Contract 2a General Construction Contract
- Contract 2b Mechanical Contract
- Contract 2c Plumbing Contract
- Contract 2d Electrical Contract

B. Contract Documents indicate the work of each prime Contract and related requirements and conditions that have an impact on the project. Related requirements and conditions that are indicated on the Contract Documents include, but are not necessary limited to, the following:

1. Phasing
2. Existing site conditions
3. Alternates
4. Allowances
5. Miscellaneous Steel to be done by **Contact 2a – General Construction (GC).**
6. GC is responsible for reviewing MEP drawings in order to quantify lintels and other openings requiring miscellaneous steel support. The work also includes the removal of any and all materials in order to install the steel as well as to create the clear opening required.
7. Firestopping
8. Final Cleanup (All Contracts are responsible for their final cleanup.)
9. Each Prime Contractor shall refer to specification Section 011200 – Special Provisions for Specific Scope Requirements for each Prime Contractor.

1.07 CONTRACT 2a – GENERAL CONSTRUCTION

A. **Contract 2a -General Construction** includes Architectural, civil, Structural, plus other construction operations traditionally recognized as General Construction. General Construction Contractor is responsible to coordinate all primes tasks. It also includes administrative and coordination responsibilities. Work under this prime Contract includes, but is not limited to, the following:

DIVISION 00 & 01 GENERAL REQUIREMENTS
All of Division 00 & 01

DIVISION 2 – EXISTING CONDITIONS

02 41 19	Selective Demolition
02 41 20	Site Demolition
02 82 00	Asbestos Abatement Procedures

DIVISION 3 – CONCRETE

03 05 05	Under Slab Vapor Barrier
03 15 13	Waterstops
03 30 00	Cast-in-Place Concrete
03 40 00	Precast Concrete Hollow Core Slabs
03 54 00	Concrete Underlayment Patch
03 54 16	Cement-Based, Interior, Self-Leveling Underlayment

DIVISION 4 – MASONRY

04 01 10	Masonry Cleaning
04 01 20	Unit Masonry Restoration
04 01 22	Stone Restoration
04 21 13	Brick Masonry
04 22 00	Concrete Unit Masonry
04 72 00	Cast Stone Masonry

DIVISION 5 – METALS

05 12 00	Structural Steel Framing
05 31 00	Steel Decking
05 40 00	Cold Formed Framing
05 50 13	Miscellaneous Structural Fabrications
05 51 00	Metal Stairs and Railings
05 51 33	Metal Ladders

DIVISION 6 – WOOD AND PLASTICS

06 10 00	Rough Carpentry
06 10 53	Miscellaneous Rough Carpentry
06 20 00	Finish Carpentry
06 61 16	Solid Surfacing Fabrications

DIVISION 7 – THERMAL AND MOISTURE PROTECTION

07 13 26	Self-Adhered SBS Modified Bituminous Sheet Post Applied Below Grade Waterproofing
07 13 52	Modified Bituminous Sheet Waterproofing (Blindside)
07 21 00	Building Insulation
07 21 13	Continuous Insulation
07 27 26	Air Barriers
07 56 00	Fluid Applied Roofing
07 57 13	Spray Polyurethane Foam Roofing
07 62 00	Sheet Metal Flashing and Trim
07 71 00	Manufactured Roof Specialties
07 81 00	Spray Applied Firestopping
07 81 23	Intumescent Firestopping

07 84 43 Firestopping
07 90 00 Pre-Compressed Expansion Joints
07 92 00 Joint Sealants
07 95 13 Interior Expansion Cover Assemblies

DIVISION 8 – OPENINGS

08 11 13 Hollow Metal Doors and Frames
08 14 16 Flush Wood Doors
08 17 43 Colonial Wood Grain FRP/Aluminum Hybrid Door
08 31 00 Floor Access Doors
08 31 13 Access Doors and Frames
08 51 13 Aluminum Windows
08 71 00 Door Hardware
08 81 00 Glass and Glazing
08 81 17 Fire-Rated Glass
08 90 00 Louvers and Vents

DIVISION 9 – FINISHES

09 05 61 Water Vapor Emission Control System for Concrete Slabs
09 29 00 Gypsum Board
09 30 19 Porcelain Wall Tile
09 50 00 Direct Apply Acoustical Ceilings
09 51 13 Acoustical Tile Ceilings
09 51 33 Metalworks Tin Ceiling
09 62 40 Modular Athletic Flooring
09 65 00 Sheet Vinyl Flooring
09 65 13 Resilient Base and Accessories
09 65 14 Stair Landings, Risers, Treads and Ramps
09 65 19 Vinyl Tile Flooring
09 65 20 Resilient Solid Vinyl Tile
09 67 23 Resinous Flooring
09 91 13 Exterior Painting
09 91 23 Interior Painting
09 93 00 Staining and Transparent Finishing
09 96 00 Elastomeric Coatings over Cement Board
09 96 30 Elastomeric Coatings
09 96 46 Intumescent Painting
09 96 53 Elastomeric Wall Coatings

DIVISION 10 – SPECIALTIES

10 11 00 Visual Display Boards
10 12 00 Display Cases
10 14 19 Interior Signs
10 44 00 Fire Protection Specialties

DIVISION 12 – FURNISHINGS

12 21 24 Manual Roller Shade System
12 35 54 Manufactured Casework
12 48 40 Entrance Mats and Grates

DIVISION 14 – CONVEYING EQUIPMENT

14 21 00 Electric Traction Elevators

DIVISION 31 – EARTHWORK

31 00 00 Earthwork
31 10 00 Site Clearing
31 20 00 Earth Moving
31 23 19 Dewatering – NY
31 31 17 Soil Conservation – NY
31 50 00 Excavation Support and Protection

DIVISION 32 – EXTERIOR IMPROVEMENTS

32 12 16 Asphalt Paving
32 13 13 Concrete Paving
32 16 14 Concrete Site Work
32 17 23 Pavement Markings
32 17 26 Tactile Warning Surfacing
32 31 13 Chain-link Fences and Gates
32 31 13 Vinyl-Coated Chain-Link Fences and Gates
32 33 00 Signs – NY
32 92 00 Turf and Grasses
32 93 00 Plants

DIVISION 33 – UTILITIES

33 05 00 Common Work for Utilities
33 31 00 Sanitary Sewer – NY
33 39 00 Sanitary Utility Sewerage Structures
33 41 00 Storm Drainage

B. The following additional requirements and responsibilities for the **Contract 2a - General Construction** include, but not limited to the following:

1. Refer to specification 011200- Special Provisions for additional requirements.
2. Temporary site protection and fencing.
3. All blocking and in walls for use by other trades. Other trades shall identify the locations of required blocking.
4. Blocking where necessary for installation of work under the contract for general construction.
5. Furnish and install all slotted grilles adjacent to convection radiation, including in walls and casework.
6. Winter Conditions: Snow plowing/shoveling all building areas exposed to weather, including access to the staging areas.
7. Steel stud framing for all walls, interior and exterior.
8. Concrete plank building structure and CMU bearing walls.
9. Interior finishes including but not limited to flooring, gypsum board, ceilings, tile, etc.
10. Furnish all dumpsters for building construction, for use by all trades and ensure proper disposal of all materials.
11. Install access panels/doors supplied by other trades.
12. Floor leveling in new construction.

13. Dewatering facilities and drains.
14. Fire Protection specialties including fire extinguishers and cases.
15. Install sleeves and other materials provided by other Contracts. Coordinate location of material installation with other Contractors.
16. Protection of work after installation.
17. Fire and smoke stopping/sealing.
18. Interior floor, wall and ceiling expansion joints as per the contract documents.
19. Framing for all soffits, interior and exterior.
20. All Interior architectural woodwork.
21. Foundation drains installation and tie into storm system.
22. Damp proofing and drainage board at foundations.
23. All louvers, casework and interior millwork.
24. Removal and disposal of fill in a legal manner.
25. Sidewalks, curbs, concrete pads and pavers.
26. Site excavation, bedding/concrete encasement and backfill by GC.
27. Construction of sidewalk sheds/bridges.
28. Housekeeping pads.
29. Temporary Heat: as required to execute Exterior Masonry work, Interior work and Interior finishes, as noted in Section 01 50 00 Temporary Facilities and Controls.
30. Each contractor, prior to being awarded the contract shall prepare and submit a Preliminary Master Project Schedule for their Work. Within (3) weeks of NTP all Prime Contractors will provide a coordinated Draft master schedule.

1.08 CONTRACT 2b – MECHANICAL

A. **Contract 2b – Mechanical** includes heating, ventilation, and air conditioning system and the temperature control system. Work under this prime Contract includes, but is not limited to, the following:

DIVISION 00 & 01 GENERAL REQUIREMENTS

DIVISION 02 EXISTING CONDITIONS

02 41 19 Selective Demolition (as it pertains to mechanical work)
02 41 20 Site Demolition (as it pertains to mechanical work)

DIVISION 3 – CONCRETE

03 05 05 Under Slab Vapor Barrier (as it pertains to mechanical work)
03 30 00 Cast-in-Place Concrete (as it pertains to mechanical work)

DIVISION 7 – THERMAL AND MOISTURE PROTECTION

07 84 43 Firestopping (as it pertains to mechanical work)
07 92 00 Joint Sealants (as it pertains to mechanical work)

DIVISION 8 – OPENINGS

08 31 13 Access Doors and Frames (as it pertains to mechanical work)
08 90 00 Louvers and Vents (as it pertains to mechanical work)

DIVISION 14 – CONVEYING EQUIPMENT

14 21 00 Electric Traction Elevators (as it pertains to mechanical work)

DIVISION 23 – HEATING, VENTILATING AND AIR CONDITIONING

23 00 00	Mechanical Summary of Work
23 01 30	Existing HVAC Air Duct Cleaning
23 05 00	Common Work Results for HVAC
23 05 13	Common Motor Requirements for HVAC Equipment
23 05 19	Meters and Gages for HVAC Piping
23 05 23	General-Duty Valves for HVAC Piping
23 05 29	Hangers and Supports for HVAC Piping and Equipment
23 05 48	Mechanical Vibration and Seismic Controls
23 05 53	Mechanical Identification
23 05 93	Testing, Adjusting and Balancing for HVAC
23 07 13	Duct Insulation
23 07 14	Acoustic Duct Insulation
23 07 19	Piping Insulation
23 09 12.11	Direct Digital Control System for HVAC
23 09 93	Sequence of Operations for HVAC Controls
23 21 13	Hydronic Piping
23 21 16	Hydronic Piping Specialties
23 23 00	Refrigerant Piping
23 31 13	Metal Ducts
23 33 00	Air Duct Accessories
23 34 16	Centrifugal HVAC Fans
23 37 13	Diffusers, Registers and Grilles
23 72 00	Energy Recovery Ventilators
23 81 26	Split-Systems Air-Conditioners
23 82 36	Finned-Tube Radiation Heaters
23 82 39	Cabinet Unit Heaters

B. The following additional requirements and responsibilities for the **Contract 2b - Mechanical** include, but not limited to, the following:

1. Refer to specification 011200- Special Provisions for additional requirements.
2. Removal and proper disposal of all debris.
3. Supply access panels/doors to be installed in walls, floors or ceilings to General Contractor for General Construction-Contract 2a to install.
4. Provide all excavation and backfill for trenches inside building walls associated with their work.
5. Provide starters to Electrical Contractor, installation to be by Electrical Contractor-Contract 2d.
6. Protection of work after installation.
7. Mechanical connections to equipment furnished by any other Contract.
8. Coordination Drawings, coordinate with Plumbing Contract and Electrical Contract.
9. Low voltage wiring for HVAC systems.
10. Trades shall identify the locations of required blocking for installation by General Contractor-Contract 2a.
11. Firestopping and sealing.
12. Temporarily remove, carefully store and reinstall existing hung ceiling panel assembly as required to access areas of work within plenum.
13. Each contractor, prior to being awarded the contract shall prepare and submit a Preliminary Master Project Schedule for their Work. Within (3) weeks of NTP all Prime Contractors will provide a coordinated Draft master schedule.

1.09 CONTRACT 2c – PLUMBING

A. **Contract 2c – Plumbing** includes plumbing equipment, accessories and piping systems. Work under this prime Contract includes, but is not limited to, the following:

DIVISION 00 & 01 GENERAL REQUIREMENTS

DIVISION 02 EXISTING CONDITIONS

02 41 19 Selective Demolition (as it pertains to plumbing work)
02 41 20 Site Demolition (as it pertains to plumbing work)

DIVISION 3 – CONCRETE

03 05 05 Under Slab Vapor Barrier (as it pertains to plumbing work)
03 30 00 Cast-in-Place Concrete (as it pertains to plumbing work)

DIVISION 7 – THERMAL AND MOISTURE PROTECTION

07 84 43 Firestopping (as it pertains to plumbing work)
07 92 00 Joint Sealants (as it pertains to plumbing work)

DIVISION 8 – OPENINGS

08 31 13 Access Doors and Frames (as it pertains to plumbing work)

DIVISION 14 – CONVEYING EQUIPMENT

14 21 00 Electric Traction Elevators (as it pertains to plumbing work)

DIVISION 22 – PLUMBING

22 00 00 Plumbing Summary of Work
22 05 01 Basic Plumbing Materials and Methods
22 05 19 Meters and Gages for Plumbing Piping
22 05 23 Plumbing Valves
22 05 29 Hangers and Supports for Plumbing and Piping Equipment
22 05 48 Vibration and Seismic Controls
22 05 53 Identification for Plumbing Piping and Equipment
22 07 19 Plumbing Piping Insulation
22 11 16 Domestic Water Piping
22 11 19 Domestic Water Piping Specialties
22 11 23 Facility Natural-Gas Piping
22 13 16 Sanitary Waste and Vent Piping
22 13 19 Sanitary Waste Piping Specialties
22 14 13 Facility Storm Drainage Piping
22 14 23 Storm Drainage Piping Specialties
22 42 13 Plumbing Fixtures
22 52 17 Miscellaneous Equipment

B. The following additional requirements for the **Contract 2c - Plumbing** include, but not limited to, the following:

1. Refer to specification 011200- Special Provisions for additional requirements.
2. The Plumbing contractor shall furnish, install and connect all plumbing supply, sanitary, and storm lines inside the building and to 5' (five feet) beyond the exterior building wall.
3. Removal and proper disposal of all debris.
4. Provide all excavation and backfill for trenches inside building walls associated with their work.
5. Supply access panels/doors to be installed in walls, floors or ceilings to General Contractor for General Construction-Contract 2a to install.
6. Provide starters to Electrical Contractor-Contract 2d, installation to be by Electrical Contractor.
7. Protection of work after installation.
8. Plumbing connection to equipment furnished by any other Contract.
9. Temporary Water: Provide temporary water service as noted in Section 01 50 00 Temporary Facilities and Controls.
10. Install fixtures waste, vent, gas, water and other items for equipment provided by other Contracts.
11. Trades shall identify the locations of required blocking for installation by General Contractor-Contract 2a.
12. Firestopping.
13. Temporarily remove, carefully store and reinstall existing hung ceiling panel assembly as required to access areas of work within plenum.
14. Each contractor, prior to being awarded the contract shall prepare and submit a Preliminary Master Project Schedule for their Work. Within (3) weeks of NTP all Prime Contractors will provide a coordinated Draft master schedule.

1.10 CONTRACT 2d – ELECTRICAL

A. **Contract 2d- Electrical** includes electric power distribution, lighting, data and telecommunication systems. Work under this prime Contract includes, but is not limited to, the following:

DIVISION 00 & 01 GENERAL REQUIREMENTS

DIVISION 02 EXISTING CONDITIONS

02 41 19 Selective Demolition (as it pertains to electrical work)
02 41 20 Site Demolition (as it pertains to electrical work)

DIVISION 3 – CONCRETE

03 05 05 Under Slab Vapor Barrier (as it pertains to electrical work)
03 30 00 Cast-in-Place Concrete (as it pertains to electrical work)

DIVISION 7 – THERMAL AND MOISTURE PROTECTION

07 84 43 Firestopping (as it pertains to electrical work)
07 92 00 Joint Sealants (as it pertains to electrical work)

DIVISION 8 – OPENINGS

08 31 13 Access Doors and Frames (as it pertains to electrical work)

DIVISION 14 – CONVEYING EQUIPMENT

14 21 00	Electric Traction Elevators (as it pertains to electrical work)

DIVISION 26 – ELECTRICAL

26 05 00	Common Work Results for Electrical
26 05 19	Low-Voltage Electrical Power Conductors and Cables
26 05 23	Control-Voltage Electrical Power Cables
26 05 26	Grounding and Bonding for Electrical Systems
26 05 29	Hangers and Supports for Electrical Systems
26 05 32	Interior Raceways Fittings and Accessories
26 05 33	Raceway and Boxes for Electrical Systems
26 05 34	Electrical Identification
26 05 36	Cable Trays for Electrical Systems
26 05 43	Underground Ducts and Raceways for Electrical Systems
26 05 44	Sleeves and Sleeve Seals for Electrical Raceways and Cabling
26 05 48	Seismic Controls for Electrical Systems
26 05 53	Electrical Identification
26 05 56	Theatrical Lighting
26 05 63	Equipment Connections and Coordination
26 08 00	Electrical Systems Commissioning
26 09 43	Network Lighting Controls
26 24 16	Panelboards
26 27 26	Wiring Devices
26 28 12	Safety Switches
26 28 13	Fuses
26 28 15	Elevator Power Module Switch
26 28 16	Enclosed Switches and Circuit Breakers
26 32 13	Engine Generators
26 32 14	Engine Generators Load Test Bank
26 36 00	Transfer Switches
26 51 00	Lighting
26 51 19	LED Interior Lighting
26 56 00	Exterior Lighting

DIVISION 27 – COMMUNICATIONS

27 00 00	Communication
27 05 00	Common Work Results for Communications
27 05 26	Grounding and Bonding for Communications
27 05 28	Pathways for Communications Systems
27 05 36	Cable Tray for Communications
27 10 00	Structured Cabling
27 11 00	Communications Equipment Room Fittings
27 13 00	Communications Backbone Cabling
27 15 00	Communications Horizontal Cabling
27 20 00	Data Communications
27 21 00	Data Communications Network Equipment
27 21 02	Data Systems
27 66 00	Communications Equipment Rooms and Fittings

DIVISION 28 – ELECTRONIC SAFETY AND SECURITY

28 00 00	Electronic Safety and Security
28 05 00	Common Work Results for Electronic Safety and Security
28 05 13	Conductors and Cables for Electronic Safety and Security
28 05 28	Pathways for Electronic Safety and Security
28 31 01	Fire Alarm System

B. The following additional requirements for the **Contract 2d - Electrical** include, but not limited to, the following:

1. Refer to specification 011200- Special Provisions for additional requirements.
2. Removal and proper disposal of all debris.
3. Supply access panels/doors to be installed in walls, floors or ceilings to Contractor for General Construction-Contract 2a to install.
4. Provide all excavation and backfill for trenches inside building walls associated with their work.
5. Install starters supplied by other trades.
6. Protection of work after installation.
7. Electrical connections to equipment supplied by other Contracts.
8. Electrical Contractor will be responsible for all site electrical excavation and backfilling, exclusive of the installation of the new electrical Manhole Structure and Duct Bank.
9. Site lighting and main electric power.
10. Remove and legally dispose of existing PCB containing lighting fixtures, bulbs and ballast.
11. Temporary Electric: Provide Temporary Electrical service and lighting for the project as noted in Section 01 50 00 Temporary Facilities and Controls.
12. Electrical Contract will remove wiring to light fixtures, drop fixtures to floor and dispose of.
13. Trades shall identify the locations of required blocking for installation by General Contractor-Contract 2a.
14. Firestopping and sealing.
15. Temporarily remove, carefully store and reinstall existing hung ceiling panel assembly as required to access areas of work within plenum.
16. Each contractor, prior to being awarded the contract shall prepare and submit a Preliminary Master Project Schedule for their Work. Within (3) weeks of NTP all Prime Contractors will provide a coordinated Draft master schedule.

1.11 MISCELLANEOUS

A. Definition of extent of Prime Contract work: The Contract Documents indicate the extent of each prime contract. Except where the Contract Documents contain a more Specific description, general names and terminology on the Drawings and in the Specification Sections determine which prime contract includes a specific element of the Project.

B. Local custom and trade union jurisdictional settlements do not control the scope of Work included in each prime contract. When a potential jurisdictional dispute or similar interruption of work is first identified or threatened, the affected prime contracts shall promptly negotiate a reasonable settlement to avoid or minimize the pending interruption and delays.

C. If it becomes necessary to refer to the contract documents to determine which prime Contract includes a specific element of required work, begin by referring to the prime Contracts, themselves; then, if a determination cannot be made from the prime Contracts, refer, in the following order, to Specification Section 011200 - Special Provisions, this section

of the Specifications, followed by the other Division-1 sections and finally with the Drawings and other Sections of the Specifications.

D. If, after referring to the contract documents, it cannot be clearly determined which prime Contractor will perform a specific item of required work, then that item of work will be included as a part of the prime Contract for General Construction Work.

E. Summary of Reference: Work of the prime Contracts can be summarized by reference to the prime contracts, General Conditions, Special Provisions, and Instructions to Modifications to the Contract Document issued subsequent to the initial printing of the Project Manual and referenced by any of these. It is recognized that the work of the prime Contracts is unavoidably affected or influenced by governing regulations, natural phenomenon, including weather conditions, and other forces outside the contract documents.

1.12 TEMPORARY SERVICE

A. Temporary service shall be provided as follows:

1. Temporary power and lighting for building and site by the Electrical Contractor 2d. Electric consumption to be paid by Owner. Temporary electrical service to be available 24hours/day, 7days/week at no additional cost to the owner.

2. Temporary Heat by the General Construction Contractor 2a - including temporary enclosures at all openings to maintain heat and provide heat for all Trades for temperature sensitive work, activities and material installations and storage, this includes but not limited to cold weather protection for masonry and concrete construction activities. Assume the building is not closed in; shrink wrap may be required Duration to be from 10/15 to 4/15 for the duration of the project. Refer to Temporary Facilities and Controls 01 50 00 for additional information.

3. Temporary sidewalk sheds/bridges by Contractor for **General Construction-Contract No. 2a.**

4. Temporary sanitary facilities by Contract 2a - General Construction. Quantities per Specification Section 011200 Special Provisions.

5. Temporary water by Contract 2c - Plumbing Contract

6. Snow plowing/shoveling all building areas exposed to weather, inclusive of the Staging Area, temporary parking areas and access to the Owners Trailer/Field Office by Contract 2a - General Construction.

7. Project identification and safety signs by Contract 2a - General Construction.

8. Each Contract is responsible for their temporary offices, storage trailers, electric hook-up and phone service.

1.13 WORK SCHEDULES

A. All work: done in accordance with a predetermined detailed Work Schedule agreed upon by Owner and Contractors. Each Prime Contractor, prior to being awarded the contract shall prepare and submit a Preliminary Master Project Schedule for their Work. Within (3) weeks of NTP all Prime Contractors will provide a coordinated Draft master schedule. Each Prime's Project Schedule are to reflect all requirements for submittals, material and equipment procurement, material stockpiling, setting up Contractor's staging area and surveying of

existing conditions. These Schedules, reflecting the critical milestone dates established by the attached 'Bid Schedule', are to be coordinated and shall be inclusive of other Prime Contractor's activity. The "Final" agreed upon overall schedule of work shall be developed and maintained by the Prime Contractor for General Construction in conjunction with the Construction Manager utilizing each Prime Contractor's Preliminary and updated Schedule(s). Specific relationships between Contractors, sequencing of activities, phasing, and critical "ties" of coordinated Work must be detailed on the Project Schedule.

1. Work Schedule shall be computer generated, in CPM format and in an additional format as approved by the Architect and Owner. Work Schedule shall be revised monthly during the Course of the Work. The latest revised Work Schedule shall be submitted each month with the Application for Payment.

B. General Contractor shall coordinate work with the Owner, other Contractors at the site, and all of its subcontractors.

C. Locations of trailers, storage areas, parking areas, and staging areas shall be coordinated with the Owner, Construction Manager and Architect.

D. It will be the responsibility of the Contractor to carefully interface all construction operations until they reach their final completion, and so the Owner's programs and services can be carried on without interruptions so that a smooth flow of all operations by all involved trades will be achieved within the allotted time.

1.14 ACCESS TO THE SITE

A. Driveways and Entrances: Keep driveways and entrances serving the premises clear and available to the Owner, the Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

1.15 CODES APPLICABLE

A. Construction will be governed by: New York State Uniform Fire Prevention and Building Code, current applicable edition, and its referenced codes and standards.
State Education Department Manual for Planning Standards.

1.16 PREPARATION OF SITE

A. Site drawings indicate existing grade elevations, final grade elevations, and locations of work on the property.

B. Contractor agrees to accept site as indicated and to remove Encumbrances, which interfere with proper fulfillment of his work without change in Contract Sum.

C. All Work as noted inside or outside of Contract Limit Lines shall be performed by Contractor as part of Contract Work.

1.17 CONTRACTOR'S USE OF PREMISES

A. Confirm Operations at the Site to Areas and Methods Permitted by:

1. Laws.
2. Ordinances.
3. Permits.
4. Contract Documents.

5. Owner's regulations.

B. General: It is the Owner's intention to continue occupancy in the existing building, including site and to conduct normal school operations during the time of construction. The Contractor's use of the premises is limited by the Owners use of the building and by the Owners right to perform construction operations with its own forces or to employ separate contractors on portions of the project.

C. Confine operations to areas within Contract limits indicated. Portions of the site beyond areas in which construction operations are indicated are not to be disturbed.

D. Do not unreasonable encumber site with materials or equipment.

E. Do not load structure(s) with weight that will endanger structure.

F. Each Subcontractor is responsible for protection and safekeeping of his materials, products and equipment stored on the premises of incorporated into the construction, until his contract is complete and accepted by the Owner.

G. Site Access: Keep driveways and entrances serving the premises clear and available to the Owner, the Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

H. Move at the Contractor's/Subcontractor's cost any stored materials, products or equipment which interfere with operations of Owner or others.

I. Special Owner Requirements:

1. Partial Owner Occupancy: The Owner reserves the right to occupy and to place and install equipment in completed areas of the building, prior to Substantial Completion provided that such occupancy does not interfere with completion of Work. Such placing of equipment and partial occupancy shall not constitute acceptance of the total Work.

2. All activities required on the site for completion of the work shall be accomplished within the Contract limit lines as indicated on the Drawings.

1.18 LINE AND LEVELS

A. Drawings indicate location of the Work.

B. Contractor shall layout all Work prior to construction and will be held responsible for its accuracy. Layout approval by Owner and Architect is required prior to construction.

C. Owner shall establish a "Datum" or "Bench Mark" at convenient locations, which will remain throughout Work, for convenience and constant reference for use of all Contractors.

D. Each Contractor is responsible for their own survey(s) and layout.

1.19 TIME FOR COMPLETION

A. It shall be understood and mutually agreed that the time for Substantial Completion is an essential condition of this Contract.

B. Contractor agrees that Work shall be prosecuted diligently and uninterruptedly at such rate as will insure Substantial Completion of all Work and Certificates of Occupancy on or before the date stated in the Contract.

C. Its is expressly understood and agreed by Contractor and Owner that the time for Substantial Completion and Certificates of Occupancy are reasonable, taking into consideration average Climatic range, restrictions concerning use of the site, and Other conditions prevailing.

D. Contractor shall schedule the Work accordingly.

1.20 EXAMINATION OF SURFACES TO BE COVERED

A. Prior to application of materials included in the various Sections, the installer, the manufacturer's representative, and the Contractor shall together examine the building and surfaces upon which materials are to be supplied.

B. The installer and the manufacturer's representative shall accept all surfaces and conditions affecting proper installation of their materials. The installer shall not proceed with the work until all conditions and surfaces not satisfactory to him.

C. The Contractor shall do all work necessary to correct unsatisfactory conditions and surfaces not specifically included as work of the subcontractor.

D. The subcontractor shall furnish to the Contractor for submission to the Architect 2 copies of his statement, countersigned by the manufacturer or his appointed representative that the entire installation has been made by correct techniques over properly prepared surfaces and under proper job conditions.

1.21 FIRE SAFETY REQUIREMENTS

A. The Contractor shall conform to the following mandatory Requirements during the course of the work:

1. Construction related debris shall be cleaned out of the Building at the end of each working day.
2. No combustible materials shall be stored neither within the building, nor on the school grounds unless as directed.

1.22 COORDINATION DRAWINGS

A. The Prime Contractor shall coordinate the work of all of their own Sub-Contractors, arrange space conditions to accommodate the work of all trades and prepare composite drawings as required to scale clearly the work of each trade Contractor in relation to each other.

B. The Contractor will be held responsible to correct unsatisfactory conditions resulting from improper coordination.

C. Prime Contractors to communicate and supply shop drawings to each other to insure proper coordination.

D. Coordination drawings shall be submitted to the Architect for review and approval.

E. Daily field reports are to be provided by all Prime Contractors to the Construction Manager.

F. Scaled and figured dimensions with respect to the items are approximate only; sizes of equipment have been taken from typical equipment items of the classes indicated. Before proceeding with the work, the contractor shall carefully check all dimensions and sizes and

shall assume full responsibility for the fitting in of equipment and materials to the building and to meet architectural and structural conditions.

G. Separate plans shall also be prepared for sleeve locations and concrete pads for mechanical equipment required by all contractors for the performance of their work. These drawings shall be coordinated with the coordination drawings. When final information is received, such data shall be promptly inserted on the coordination drawings.

H. The HVAC Contractor shall provide electronic drawing files, at a scale of 3/8" – 1'-0" showing all HVAC equipment, ductwork, and major piping, including elevations and dimensions to all fixed building elements, such as beams; columns, slabs; ceilings; including ceiling suspensions; framing; floor; walls; doors, including door swings; and windows affected by the equipment, ductwork, and piping. Show all registers, grilles, diffusers, radiators and convectors, and other terminal elements. Show location of all valves, dampers (fire, smoke, volume, and automatic), coils, humidifiers, smoke detectors, etc. requiring access for service and maintenance. Locate all access doors. Include large-scale details and sections as required to fully delineate the conditions in congested areas, leaving space for the work of the other contractors. Show plan layout of all equipment bases, pads, and inertia blocks. Clearly label all work by HVAC Contractor.

I. The Plumbing Contractor shall overlay on the electronic coordination drawings prepared by the HVAC Contractor which indicate all HVAC water supply, drain, waste, vent, sprinkler main and branch piping, risers and sprinkler heads and other major lines. Indicate piping elevations and locations of the fire hose cabinets, drinking fountains, etc., which encroach on duct shafts. Locate valves and other items requiring access for service and maintenance. Locate all access doors. Avoid interference with HVAC work and with building construction. Use same scale as drawing being overlaid. Clearly label all work by Plumbing Contractor.

J. The Electrical Contractor shall overlay on the electronic coordination drawings prepared by the HVAC, Plumbing and Fire Protection Contractors all main conduit and bus runs, cable trays, light fixtures, major equipment, and switch gear and panel boards and clearances. Show all items requiring access for service and maintenance. Locate all access doors. Avoid interference with HVAC, Plumbing, and Fire Protection work and with building construction. Use same scale as drawings being overlaid. Clearly label all work by Electrical Contractor.

K. Each Contractor shall use the signed completed coordination drawings as a working reference. Compare all shop drawings, prior to their submittal to the Construction Manager, with the coordination drawings and revise the shop drawings to fit the coordination drawing condition. If revisions to the coordination drawings are required because of shop drawings, make revisions as directed by Construction Manager and notify all affected contractors with copy of notification to Construction Manager. Maintain up-to-date record of all revisions on own coordination drawing copies; keep one copy at project site.

L. No extra compensation will be paid to any contractor for relocating any duct, pipe, conduit, or other material installed without coordination among trades involved or among other affected contractors. Each Contractor who causes any additional work to other contractors by improperly coordinated work or work not installed in accordance with the signed coordination drawings shall reimburse the affected other contractors for the cost of the additional work.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION 010101

SECTION 011100 – MILESTONE SCHEDULE

PART 1 – GENERAL

1.01 MASTER SCHEDULE

The following milestone schedule serves as a basis for bidding. A Master Schedule will be developed at a general meeting of the awarded contractor within 10 days of Award the Contracts. This Master Schedule will incorporate the milestones listed below.

1.02 SUBSTANTIAL COMPLETION & MILESTONE DATES

A. Project Commencement – Date of the Notice to Proceed (NTP) or Date of Contract Approval whichever is earlier.

B. Milestone Dates – Refer to Milestone Schedule set forth in the Special Provisions Specification Section 011200.

D. Final Close-out of all Contract

a. Final Close-out of Contract

i. Final close out of all contracts shall be within 30 days of the substantial completion dates established above. All work including, but not limited to punch lists, project closeout, testing, balancing, owners operation, O&M manuals, as-builts, warranties, etc. shall be complete.

ii. All work required by the Construction Manager to execute final closeout of contracts after dates noted established above, if determined to be caused by contractor, shall result in payment to the Construction Manager in the form of a change order deduct to the base contract.

F. Coordination of Move-In

It is the intent of the School District to begin move-in of furnishings, fixtures and equipment prior to the dates of substantial completion as outlined above. The Contractor shall work in harmony with the School District to facilitate such move-ins for the purpose of beneficial use and occupancy.

G. School District/School Operation and Custodial Hours
During the Summer, work will be permitted between **7:00 a.m. and 4:00 p.m.** during the normal work days, Monday through Friday and Saturday as per local ordinances. However, when school is in session, work hours shall be from 3:00 p.m. to 11:00 p.m., Monday through Friday. All after hours work must comply with the allowable working hours and noise ordinance for the **Village of Mamaroneck.**

Each Prime Contractor may work Saturday & Sundays to make up for lost time (Saturday/Sunday work will be required if necessary to meet deadline) with prior approval from the Owner and after Contractor has verified allowable working hours by town ordinance. Contractors wishing to work on weekends or additional hours during the week shall pay for custodial hours related to same.

Consideration will be given to perform work DURING School Hours provided the area of work has a dedicated access route that does not interfere with the Students & Staff as well as NOT creating any noise in excess of 60dB as mandated by SED guidelines. After Horus work would also be required for any heavy construction work (i.e. piles, steel, etc.) that might pose a potential safety hazard to Students & Staff.

Due to extreme traffic congestion associated with student car and bus transportation, deliveries to any area of the project WILL NOT be allowed during school days from 8:00 a.m. to 9:00 a.m. and 2:00 p.m. to 3:30 p.m.

This Contractor will provide in their base bid five (5) “black out days”, to the construction schedule where no work can take place. These dates will be determined by the District and have been incorporated into the milestone dates indicated in the attached bid schedule.

The Contractor shall not interfere with the operation of existing essential services during all normal operating hours and periods. All work requiring temporary interruption of essential services shall be done only with the specific approval of the Construction Manager and Owner. The Contractor shall set up a schedule of work affecting existing services for approval by the Owner and the Construction Manager.

Separate access to the construction activities will have to be provided by the General Contractor, since school will be in session while part of the construction is on-going. The General Contractor will provide temporary stairs, scaffolding, doors, etc. to provide separate access for all trades to the construction areas.

1.03 SCHOOL DISTRICT HOLIDAYS

A. Coordinate with the District for access to work during school holidays as listed below. Hours of work to be from 7:00 a.m. to 4:00 p.m.

Labor Day
Rosh Hashanah
Yom Kippur
Columbus Day
Veterans’ Day
Thanksgiving
Winter Recess
Martin Luther King
Presidents’ Recess
Spring Recess
Memorial Day

1.04 SCHOOL DISTRICT EVENTS

A. Coordinate with the District for access to work during days where there are no students present (Superintendent Conference Days, etc.). Hours of work to be determined by the owner for each day.

1.05 EXAM / TESTING SCHEDULE

A. Coordinate with the District for access to work during days when testing will take place at the schools. Hours of work to be from 3:00pm – to 11:00pm (After Hours)

1.06 DISTRICT CALENDARS

A. 2020-2021 Calendar. See following page

END OF SECTION 011100

MAMARONECK UNION FREE SCHOOL DISTRICT
School Calendar for 2020-2021

Give Back
Conference C
Closed

SEPTEMBER				
M	T	W	T	F
	1	2	3	4
~~7~~	8	9	10	11
14	15	16	17	18
21	22	23	24	25
~~28~~	29	30		

OCTOBER				
M	T	W	T	F
			1	2
5	6	7	8	9
~~12~~	13	14	15	16
19	20	21	22	23
26	27	28	29	30

NOVEMBER				
M	T	W	T	F
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16	17	18	19	20
23	24	~~25~~	~~26~~	~~27~~
30				

DECEMBER				
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JANUARY				
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~~18~~	19	20	21	22
25	26	27	28	29

SEPTEMBER
- 3 Superintendent's Conf Day - no students
- 7 *Labor Day - No School*
- 8 First Day of School: (ALL STUDENTS)
  - Elementary: 8:40AM-3:00 PM (Grades 1-5)
  - 8:40 AM - 11:40 AM - kindergarten
  - Hommocks: 8:00 AM - 2:09 PM (Grade 6)
  - 9:00 AM - 2:57 PM (Grades 7 & 8)
  - High School: 8:00 AM - 2:42 PM (Grade 9)
  - 10:45 AM - 2:42 (Grades 10 - 12)
- 28 Yom Kippur - no school

OCTOBER
- 12 Columbus Day

NOVEMBER
- 3 Superintendent/Conf. Day - no students
- 11 Veterans Day
- 25-27 Thanksgiving Recess

DECEMBER
- 23-31 Holiday Recess

JANUARY
- 1 Holiday Recess
- 4 Schools Reopen
- 18 Martin Luther King, Jr.

FEBRUARY
- 15-19 Winter Recess

MARCH
- 10 Superintendent/Conf. Day - no students
- 29-31 Holiday Recess

APRIL
- 1-2 Holiday Recess
- 5 TBD: Snow/Spring Giveback Day #1

MAY
- 31 Memorial Day

JUNE
- 1 TBD: Snow/Spring Giveback Day #2
- 25 Last Day of School

FEBRUARY				
M	T	W	T	F
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22	23	24	25	26

MARCH				
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22	23	24	25	26
~~29~~	~~30~~	~~31~~		

APRIL				
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MAY				
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17	18	19	20	21
24	25	26	27	28
~~31~~				

JUNE				
M	T	W	T	F
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21	22	23	24	25
28	29	30		

Adopted by the Board of Education: January 14, 2020

125.

SECTION 011200 – SPECIAL PROVISIONS

Mamaroneck Union Free School District
Capital Improvements at Mamaroneck Avenue School

SPECIAL PROVISIONS

These Special Provisions are in addition to the Plans, Specifications and the other Contract Documents and shall be part of this Agreement between the Owner and the Contractor. All references to "This Prime Contractor", "This Contractor" or "Contractor" refer to the **General Contractor, Plumbing Contractor, Mechanical Contractor** and **Electrical Contractor**. In cases of contradictions, the most stringent Provision shall govern.

General Requirements for Each Prime Contractor

I. General

1. All dates, durations, etc. defined herein shall be in business days.
2. Except for the basic building permit, each Prime Contractor's price shall include all fees and other costs for securing and maintaining (by the Prime Contractors or their subcontractors) for the life of the job; all permits, PE licenses, connection fees, inspections, etc., applicable to, or customarily secured for the Work. This provision includes any applications and/or permits to be issued by utility companies in the name of the Prime Contractor, or the Owner, as required for the Work. Originals of all permits are to be issued in the name of the Prime Contractor as required for the Work. The Prime Contractor shall furnish the Construction Manager with original copies of all permits prior to the commencement of the Work, and, shall prominently display a copy of all permits at a location agreed to with the Construction Manager.
3. One week after Notice to Proceed (NTP), each Prime Contractor shall provide two copies of a video taped recording of all existing conditions to the Construction Manager. This taping shall provide a record of all-existing buildings, grounds, exterior conditions and interior conditions. The Contractor shall schedule a representative of both the Owner and the Construction Manager to be present at this taping. In the absence of this record, the Prime Contractor shall be responsible for paying the costs associated with any and all repairs or replacements of existing materials and/ or conditions that were damaged in an area where the Prime Contractor is working or has worked, as may be deemed necessary by the Owner or the Construction Manager.
4. Each Prime Contractor is responsible for providing the required mock-ups defined by the Contract Documents out of sequence as needed by the Architect.
5. Each Prime Contractor is responsible for providing all required Engineered material calculations as defined by the contract documents.
6. Each Prime Contractor shall provide drinking water for his own employees.
7. On Site Communications. Each Prime Contractor shall provide, or otherwise see that, the project manager, or site managers, and/or responsible workers of each Prime Contractor and major subcontractor are equipped with cellular phones for the purpose of staying in contact with for the Construction Manager.
8. Each Prime Contractor shall include in his base price the cost of all rigging and equipment required for the performance and installation of the Work.

9. **Each bidder who is awarded a contract must perform its work in compliance with all applicable CDC, OSHA and New York State protocols related to the COVID-19 pandemic, including social distancing, cleaning and disinfection protocols. Each bidder who is awarded a contract must ensure the individuals and entities retained by it to perform work comply with all applicable CDC, OSHA and New York State protocols related to the COVID-19 pandemic. Each bidder who is awarded a contract will be responsible to ensure the safety of those retained by the individuals and entities retained by it to perform its contract obligations and will be responsible for the means and the methods utilized to perform the Work. Each bidder who is awarded a contract will be required to cooperate with other contractors engaged by the School District/Owner in providing access to construction areas at the Project site while maintaining compliance with all applicable CDC, OSHA and New York State protocols related to the COVID-19 pandemic.**

   Any fines imposed or incurred for violation(s) of the Executive Orders of the Governor of New York State related to the COVID-19 pandemic as well as for violation(s) of all applicable CDC, OSHA and New York State protocols related to the COVID-19 pandemic will be the sole responsibility of the bidder awarded a contract whose conduct caused the violation(s).

   Each prime contractor must implement and follow all NYS guidelines and regulations regarding COVID-19. Including but not limited to hand washing/sanitizing stations, disinfecting, social distancing, contact tracing logs, etc... COVID-19 protocols, policy and procedures must be detailed and included in each prime contractor's safety manual and logistics plan and is to be submitted to the construction manager. This requirement extends to all subcontractors of the prime contractor.

II. Schedule

1. All Contractors are to recognize that the Project Schedule is of critical importance to the Owner. All aspects of construction must reflect a 'time is of the essence' construction strategy. The attached 'Bid Schedules' serves as a guide of critical milestone dates to the Project. Failure to meet intermediate milestone dates will jeopardize the overall Project Schedule. This failure will mandate Contractor(s) to, increase staff, work overtime, or use other means to recover time, at the costs of those Contractor(s) responsible for such delays. In addition, all costs due to delays in completion of the Work, which require additional Custodial Overtime, Construction Management services, Architectural services, and Engineering services beyond the Work duration in the Bid Schedule, shall be borne by Contractor(s) responsible for delays.
2. Each contractor, prior to being awarded the contract shall prepare and submit a Preliminary Master Project Schedule for their Work. **Within (3) weeks of NTP all Prime Contractors will provide a coordinated Draft master schedule**. Each Prime's Project Schedule are to reflect all requirements for submittals, material and equipment procurement, material stockpiling, setting up Contractor's staging area and surveying of existing conditions. These Schedules, reflecting the critical milestone dates established by the attached 'Bid Schedule', are to be coordinated and shall be inclusive of other Prime Contractor's activity. The "Final" agreed upon overall schedule of work shall be developed and maintained by the Prime Contractor for General Construction in conjunction with the Construction Manager utilizing each Prime Contractor's Preliminary and updated Schedule(s). Specific relationships between Contractors, sequencing of activities, phasing, and critical "ties" of coordinated Work must

be detailed on the Project Schedule. All Contractors shall utilize "Sure Track Project Manager 3.0-" as produced by Primavera Systems, Inc., -or- equal platform producing Gant Style Scheduling.

3. All Prime Contractors shall review the completed "Final" detailed construction schedule and acknowledge their acceptance of this schedule by signing a copy to be kept on record by the Construction Manager. This agreed upon schedule must incorporate all milestone dates and shall be established within five (5) weeks of Notice to Proceed.
4. The Prime Contractor for General Construction shall update the detailed construction schedule with the Construction Manager and issue copies to the other Prime Contractors, the Owner, Construction Manager, and the Architect monthly. Each Prime Contractor shall provide the Prime Contractor for General Construction with all information necessary to provide these updates.
5. Each Prime Contractor is to submit a schedule of projected fabrication on long lead items (items requiring four weeks and over to fabricate) three weeks after Notice to Proceed. Progress/Status reports on fabrication to be submitted to the Construction Manager every two weeks. 'Rate of Change' chart and marked up shop drawings to be included in these reports.
6. The Prime Contractors shall be responsible for coordinating and expediting their fabrication and delivery schedules and keeping the Construction Manager informed as to their progress and their anticipated ability to stay on schedule. Should it become necessary (in the opinion of the Construction Manager) to supplement the Prime Contractor's expediting efforts in order to maintain job progress, the Construction Manager may elect to charge all costs incurred to said Prime Contractor.
7. In the event that Owner makes special arrangements to open a building at the request of a Contractor and the Contractor does not show, the Prime Contractor shall pay the Owner all costs incurred. All parties agree that any action taken to enforce this requirement shall not be construed by any Prime Contractor or its subcontractors/suppliers, as a reason for a claim (for either time or money) for delay to the Work or to the Prime Contractor, its subcontractors, or suppliers.
8. The Owner shall take partial occupancy of the building additions and renovated spaces in accordance with the dates established by the Bid Schedule and the Special Provisions. The Contractors shall perform all Work necessary to maintain the Owner's move-in and occupancy schedule.
9. The Contractors shall include in their base price, all out of sequence Work and any Work required to be performed during overtime hours or non-working hours necessary to maintain the Master Schedule, the Prime Contractors' project schedule, or, the Owner's move-in schedule.

III. Submittal Milestone Requirements

Submittal Priorities

The following submittal dates (in business days) are critical to allow for proper fabrication timeframes to ensure timely completion of the project to meet the attached bid schedule. A complete listing of all submittal requirements is located in "Section 01300 Submissions", which shall be accompanied by each division's specific submittal requirements.

Major General Construction Submittals

Scaffolding and/or Stair tower-(may require PE Stamp)	15 days from Notice to Proceed
Bracing/Shoring-(may require PE Stamp)	15 days from Notice to Proceed
Foundation Shop Drawings	15 days from Notice to Proceed
Rebar/Reinforcing Shop Drawings	15 days from Notice to Proceed
Structural Steel/Decking	15 days from Notice to Proceed
Masonry Submittals/Shop Drawings	15 days from Notice to Proceed
Stormwater/Sanitary	15 days from Notice to Proceed
Doors/Hardware	15 days from Notice to Proceed
Windows/Openings	15 days from Notice to Proceed
Waterproofing	15 days from Notice to Proceed
Vertical Transportation (Elevators)	15 days from Notice to Proceed
Louvers	15 days from Notice to Proceed
Wood Flooring	15 days from Notice to Proceed
Interior Finishes	20 days from Notice to Proceed
Casework	20 days from Notice to Proceed
All remaining Submittals with-in	**20 days from Notice to Proceed**

Major Roofing Construction Submittals

Roofing/Tapered Shop Drawings	10 days from Notice to Proceed
Roofing	10 days from Notice to Proceed
Mechanical Curbs	10 days from Notice to Proceed
Misc. Structural Steel	15 days from Notice to Proceed
All remaining Submittal with-in	**20 days from Notice to Proceed**

Major Site Construction

Asphalt Pavement and finish surfaces	15 Days after Notice to Proceed
Concrete curbs and slabs	15 Days after Notice to Proceed
All remaining Submittals with-in	**20 days from Notice to Proceed**

Major Plumbing Equipment

Plumbing Equipment	15 days from Notice to Proceed
Plumbing Fixtures	15 days from Notice to Proceed
All remaining Submittals with-in	**20 days from Notice to Proceed**

Major HVAC Equipment

Duct Work	15 days from Notice to Proceed
Equipment	20 days from Notice to Proceed
Controls	20 days from Notice to Proceed
Hot/Chilled Piping and Enclosures	20 days from Notice to Proceed
All remaining Submittals with-in	**20 days from Notice to Proceed**

Major Electrical Equipment

Service Equipment	15 days from Notice to Proceed
Fire Alarm	15 days from Notice to Proceed
Public Address/Intercom	15 days from Notice to Proceed
Light Fixtures	15 days from Notice to Proceed
All remaining Submittal with-in	**20 days from Notice to Proceed**

IV. Construction Milestones

All Prime Contractors

Special consideration should be made to the requirements of the project bid schedule attached in the Specifications. Prime Contractors will be required to man each contract to meet the milestone dates indicated below and/or in the contract bid schedule. All costs should be included in the bid for working multiple shifts, nights, weekends, and holidays to complete each phase of the project.

Time frames indicated, show milestone dates required to be met by all Prime Contractors. These areas, once completed, will be punch-listed and given partial occupancy for the Owner to occupy. Occupying these areas is critical to the Owner. If said dates are not met Liquidated damages may be assessed and back-charged to the responsible Contractor**.**

KEY MILESTONE DATES:

Mamaroneck Ave. Elementary School

WOOD FLOORING REPLACEMENTS
- Construction Start: **June 29, 2021** | Substantial Completion: **August 20, 2021**

GYM WATERPROOFING
- Construction Start: **June 29, 2021** | Substantial Completion: **August 30, 2021**

FIRST FLOOR CORRIDOR CEILING REPLACEMENT
- Construction Start: **June 29, 2021** | Substantial Completion: **August 30, 2021**

MULTI-PURPOSE ROO CEILING, FLOOR & LIGHTING RENOVATION
- Construction Start: **June 29, 2021** | Substantial Completion: **August 30, 2021**

MASONRY FAÇADE RESTORATION
- Construction Start: **June 29, 2021** | Substantial Completion: **August 30, 2021**

NEW ELEVATOR ADDITION
- Construction Start: **June 29, 2021** | Substantial Completion: **December 31, 2021**

Mamaroneck Avenue Elementary School

A new elevator/classroom addition will be added to the building on the Gertude Ave side of the building, with a staging area directly adjacent to the new addition. The project is scheduled to start immediately after students leave the building and must be complete for the return of student after winter break. The new building will host a new four stop elevator, three classrooms, one small group instruction room, and connector hallways on each new level.

The majority of structural work is scheduled to take place over the summer ’21, as booming and crane operations will be limited during the school year to after-hours and holiday, at no additional cost to the owner.

Wood flooring replacements will commence immediately after students depart for summer break. The District will have prepared rooms ahead of time to start shortly after the last day of school, which will act as a starting point for the contractor. **The Prime Flooring Contractor performing the work will only be allowed to remove as much wood flooring that can be replaced within a 72-hr period.** Coordination with the CM/Owner is critical to ensure the District prepare these rooms for the new school year.

The lower gymnasium will undergo a waterproofing and flooring replacement program over the summer and must be finished with it’s final flooring for the return of students in September. Access to the space will be through corridors leading to the exterior of the building. Most -if not all- of the demolition and concrete replacement will need to be carted-away and concrete pumped into the space due to it’s isolation from the exterior for the building.

The multi-purpose room will undergo a ceiling replacement prior to the flooring replacement and a full room painting project. Some lighting and other ceiling equipment will be reused, with the new ceiling replacement, with a new lighting system being installed. This space will need to be turned back over to the Owner by August 25, 2021 in preparation of students returning. Coordination between ceiling renovation, flooring renovation, painting and lighting is critical to ensure the space is turned over on time for the new school year.

The first-floor corridor will be receiving a new ceiling system with an architectural panel design, integrating existing MEP components. This work must commence and be complete over the summer recess.

A significant portion of the exterior of the building will also undergo a masonry renovation in which the entire face of the building will be demolished, protected, and reinstalled. This work will require skilled tradesmen who are able to perform the work in an efficient manner to ensure the building’s structural integrity is not at-risk during demolition and reinstallation. This work is expected to commence and be complete over the summer recess.

An extensive HVAC replacement program will also commence at the beginning of the summer recess, including and a new RTU on steel dunnage and ductwork. The dunnage and installation of the RTU will need to be performed during the summer recess to avoid disturbance and after hour costs in the fall. Any crane picks for new work or removal of existing equipment must be performed when the building is not occupied with students.

V. SCHOOL OPERATIONS & CONTRACTOR WORK HOURS

This project will affect many areas, which in some cases will remain in operation during construction.

All contract work being performed **before and after the summer recess**, during school session, will need to be perform after-hours (3:00pm-11:00pm). The contractor is responsible for abiding by the local sound ordinance for construction activities, and will be responsible for any fines they may incur if not followed.

All contract work occurring **over the summer recess**, outside of school session, may be performed between during the hours of 7:00am and 4:00pm. Any other contract work effecting the operation of the

school, at any point over the project schedule, must be performed on an after-hours schedule, weekends or school holidays.

Each Prime Contractor may work Saturday & Sundays to make up for lost time (Saturday/Sunday work will be required if necessary to meet deadline) with prior approval from the Owner and after the Contractor has verified allowable working hours by town ordinance. If any Prime Contractor must work on either a Saturday, Sunday or a Holiday, in order to make up time that has been lost due to the same contractor, that Contractor will be responsible to reimburse the District for any custodial overtime costs.

Due to extreme traffic congestion associated with student car and bus transportation, deliveries to any area of the project WILL NOT be allowed during school days from

Mamaroneck Ave: 8:00 a.m. to 9:00 a.m. and 2:30 p.m. to 3:30 p.m.

All Contractors will provide in their base bid (5) five "black out days", per school year, to the construction schedule where no work can take place due to testing or any other discretion of the Owner. These dates will be determined by the District and have been incorporated into the milestone dates indicated in the attached bid schedule.

VI. SAFETY / LOGISTICS/STORAGE

1. Two weeks after the receipt of the Notice to Proceed, the Prime Contractor for General Construction shall provide a Site Safety/Logistics Plan to the Construction Manager. The site logistics plan should minimally include locations of the eight-foot high temporary fence, traffic plans for deliveries and removals, refuse container locations, crane locations, pick locations, boom radius, and lift locations. This plan shall also show the location of all staging and storage areas, non-rated and fire-rated partitions used to separate construction and school areas, made with plywood and/or gypsum wallboard, etc. The logistical information represented by the construction documents shall serve as a minimal guide.
2. Each prime contractor is to submit their corporate safety policy (2) weeks after notice to proceed. Plan to minimally meet OSHA standards. Each Prime Contractor shall make the participation of their subcontractors in this program mandatory. These Safety Programs should be a detailed Company Policy defining the specifics as to how a safe work environment shall be maintained
3. Each Prime Contractor and Sub Contractors shall schedule weekly safety meetings (Job Site Safety Talks) and submit meeting minutes indicating attendees and topics to the Construction Manager.
4. Each Prime Contractor is to identify in writing to the Construction Manager their "OSHA Competent Person Regarding Safety" Definition. "Competent person" means one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.
5. All flagmen required for deliveries to the site are to be furnished by the Prime Contractor responsible for the delivery. Any and all deliveries crossing the site or student traffic areas shall be escorted by flagmen. All flagmen shall wear orange vests. All deliveries shall be scheduled and coordinated with the Construction Manager and the Owner. Delivery blackout periods for bus traffic interference shall be established with the Construction Manager.

6. Smoking, firearms, alcoholic beverages, and indecent photography are expressly prohibited on all school properties. All persons representing Contractors, subcontractors or suppliers shall wear shirts, long pants and other proper attire while on school property. All persons representing Contractors, subcontractors or suppliers shall conduct themselves in a professional manner consistent with the rules and policies of The School District, and the New York State Education Department while on school property or otherwise representing this project.
7. Each Prime Contractor will ensure that all their employees, while on school property, will wear hard hats, high visibility vests, and ID badges at all times. Anyone on site without this safety gear will be escorted off school property.
8. Each Prime Contractor will ensure that every employee working on this project has completed a 10-hour OSHA training course. Any worker that cannot present a 10-hour OASHA safety-training card will be escorted off the property.
9. Food truck vendors for Construction Workers will only be allowed on school property with prior authorization from the School District. The District may allow or discontinue food vendor truck service at any time for any reason.
10. **Identification Badges**. Each Prime Contractor will provide an ID badge for each of their field personnel prior to coming on school property. All workmen shall display the badge on their person while on site, and at all times. Failure to wear identification badge at all times will result in the immediate removal from the jobsite.
11. Each Prime Contractor is responsible for their own storage and personnel trailers at each site. Each Contractor will be required to supply man trailers and storage box trailers as required. All costs related to its delivery, construction, protection, power, etc. is borne by the individual Contractors utilizing space. The Owner WILL NOT PROVIDE STORAGE SPACE. The placement of these trailers will be strictly limited to predetermined locations. Approval of the placement of any trailer or storage box must be received from the Construction Manager.
12. The parking for construction personnel shall be limited to designated parking areas only. Failure to abide by this rule will result in towing of cars at the expense of the Prime Contractor whom employs the individual.
13. All delivery vehicles/trucks/machinery/etc. permitted on site, must be equipped with back-up alarms and enter through the designated access points. Failure to demonstrate this ability will result in cancellation of delivery or stoppage of work. All delays associated with this cancellation will be the responsibility of the Prime Contractor responsible for the Work involved.
14. All temporary construction site fences installed by the any Contractor shall be installed with a tightly woven, blind screen mesh. This mesh is to be installed on the “construction” side of the fence. The General Contractor will maintain all fencing daily and lock gates at the end of the day.
15. All crane picks, material delivery, etc. must be coordinated so as not to lift over any occupied area of the building. If absolutely necessary, this work shall be done on off hours to ensure the safety of the building occupants. Crane location must be carefully chosen to ensure the safety of building occupants. Crane picks must also not be conducted during academic hours within 20’ of a fully-occupied building.

16. The Owner or Construction Manager reserve the right to have all hoisting equipment periodically inspected by an independent inspector whose findings will be binding. The Prime Contractor at its own expense must make corrections before continuing work. The Owner or Construction Manager will not assume any responsibility for the safe operation of any hoisting equipment by exercising this right. Each Prime Contractor or Sub Contractor shall cooperate with the inspector by allowing time for the inspection. The Prime Contractor shall be notified 24 hours prior to the time of the inspection. These inspections do not release the Prime Contractor of their responsibility to provide all engineering, permits, and inspections as required by OSHA or the SED prior to use of any hoisting equipment.
17. All vehicular traffic (personal vehicles, trucks, equipment, deliveries, etc.) are to use the designated entrances as outlined on the Logistics Drawings. Access by other routes is to be on exception basis only.

VII. SUBMITTALS

1. Each copy of each submittal shall have attached as the cover page the "Submittal Cover Sheet". All information requested in "Section 01 33 00 Submittal Requirements" shall be provided by the respective Contractor. Submittals will be returned without review if the cover sheet is not accurately completed.

2. Each Prime Contractor shall generate a complete "Submittal Log" within one calendar week of the Notice to Proceed. This log is to list all required submittals specific to your trade as detailed in the Project Manual/Specs. See enclosed form for your use. "ROJ" stands for Required on Job to assist your judgment of the time gap between submission, Architect review, fabrication/procurement and on-site need for putting the work item into place.

3. Each Prime Contractor shall review all submissions for completeness. Each Prime Contractor is responsible to stamp all shop drawings prior to submission to the Architect. The Architect will not review any shop drawings unless first reviewed by said Contractor. Bundle similar material submissions for proper review. Use the Architects Submittal cover sheet located in the Specifications

4. **All submissions shall be sent electronically to the Architect. Submittals will be processed and stored electronically, with access available to all Prime Contractors for coordination.**
5. Each Prime Contractor shall provide one transmittal for each submission package identifying each unique submission individually. For each submittal with the submission package, the Prime Contractor shall identify the length of the delivery time and the necessary "last date" an item may be received on site. Each Prime Contractor shall keep a log of all submissions in a manner prescribed by the Construction Manager and the attached form. Minimally, the Contractor shall update this submittal log biweekly and provide a copy to the Construction Manager for review and information.
6. Each Prime Contractor shall copy the Construction Manager's Project Manager on all transmittals, correspondence, RFI's and any other documents sent to the Architect, his consultants or the Owner
7. At the direction of the Construction Manager, the Prime Contractor shall provide copies of either document and/or data files for any requested document on one of the following programs: Microsoft Word, Microsoft Excel, or Primavera's SureTrack – Project Manager 2.0 scheduling program.

VIII. LINE, LEVELS & GRADE

1. The Prime Contractor for General Construction shall establish a baseline and benchmark system for each building addition, area of renovation or component. This survey work shall be completed by a NYS licensed professional surveyor. The surveyor(s) employed to establish this system or to extend and maintain an existing benchmark system for the work of other trades shall not have less than five years' experience in performing construction surveys similar to the work they will perform for this project. The other Prime Contractors and their subcontractors shall be responsible for extending these lines, levels and grades, and for performing all layouts for their own work. Each Prime Contractor is solely responsible for any damage or loss due to incorrect extension of lines, level or grades in their layout. Each Prime Contractor and their subcontractors shall be responsible for the accuracy with respect to the layout of their work. Any discrepancies or errors in the drawings, perceived by a Prime Contractor or subcontractor, shall be immediately reported to the Construction Manager and Architect. If any corrections are necessary, they shall be executed in accordance with procedures approved by the Construction Manager.
2. Each Prime Contractor and their subcontractors shall be responsible to offset, or to protect, their markings from anything that may disturb them.
3. The Prime General Construction Contractor and all other Contracts will build to existing conditions of the site and joining buildings. To confirm line, level and grade, the Prime General Construction Contractor will employ a licensed NYS surveyor by the end of the project and produce an 'As-Built' drawing including final elevations and boundaries of any structural or earth modifications.

IX. MANAGEMENT OF WORK

1. **Each Prime Contractor shall employ (from one week after Notice to Proceed until punch-list and closeout are complete) at a minimum a full-time Project Manager and full-time on-Site Super. The Project Manager and Site Super shall represent the Prime Contractor. All communications given to the Project Manager or Site Super either verbal or written shall be as binding as if given to the Prime Contractor. Important communications shall be so confirmed in writing.**
2. Each Prime Contractor shall provide copies of their daily construction reports to the Construction Manager's Field Superintendent. These reports shall be submitted no later than 10:00am the following workday. The daily reports shall provide detailed information concerning the Prime Contractors' activities and operation only. Daily Construction Reports to the owners' representative detailing manpower and work activities on site. A "Daily Construction" form is attached and shall be used for reporting these said activities. In addition, the Contractors are to submit Two Week Look Ahead schedules at every construction meeting which describes coming work in detail. A "Two Week Look a Head" form is also attached and shall be used to report said activities.
3. Each Prime Contractor shall have responsible representation at the **MANDATORY** weekly job meetings held at the Construction Manager's job office from notice to proceed thru close out. These meetings will be held to arrange for a satisfactory coordination of all building trades so as not to impede job progress. Prime Contractors or subcontractors who fail to attend the meetings will be back-charged $500.00 per each occurrence.

4. Each Prime Contractor shall submit two-week look ahead schedules identifying the anticipated activity, and material needs for all of the work scheduled to be formed by the Prime Contractor and his subcontractors for the identified time period. The Prime Contractor shall keep this schedule current and provide a biweekly report to the Construction Manager concerning the actual performance and activity compared to the two-week look ahead.

5. The MEP Coordination shall follow the guidelines stated below:

    a. Each Prime Contractor shall have sufficient responsible representatives at mechanical/electrical/plumbing coordination meetings held at a location to be determined. These meetings shall be held as frequently as required by the Construction Manager or any other Prime Contractor. The General Construction Prime Contractor shall also include a representative at these meetings.

    b. All Contractors are expected to jointly produce coordination drawings. Prime Contractors are to first submit their respective shop drawings for approval, to the Owner's Architect and Engineers in order to make any necessary changes prior to going through the coordination process. The HVAC Contractor shall provide black line mylars/ CAD Drawings showing all of the approved ductwork. The HVAC Contractor shall locate on these mylars/CAD Drawings all piping in orange pencil/ lines. The Plumbing Contractor shall locate the plumbing lines on these mylars/CAD Drawings in blue pencil/ lines. The Electrical Contractor shall indicate conduit runs in green pencil/ lines. The General Contractor will have the last coordination review. As each coordination drawing is completed, Contractors are to meet with the Construction Manager and the Architect to review and resolve all identified conflicts on the coordination drawings.

        Note: for areas without HVAC work, the Mechanical Prime shall provide the necessary mylars/ CAD Drawings with black line. All coordination meetings will be held at the Construction Manager's office.

    c. It is the responsibility of the Prime Contractor for General Construction to coordinate all points of entry through the foundations, slab penetrations, sleeves, roof openings and penetrations, wall openings and penetrations etc. with the work of all other Contractors, including but not limited to M. E. P. Primes, kitchen equipment, casework and casework accessories.

    d. It is the responsibility of each Prime Contractor to coordinate with the architectural details and elements, such as soffits, variations in ceiling height and materials, fire/smoke partitions or barriers, folding partition, doors, lockers, and any other general construction items that impact the space above the ceiling or otherwise requiring light framing and/or miscellaneous support or bracing.

6. If any Prime Contractor fails to keep the site safe and clean within four hours of being notified by the Construction Manager either verbally or in writing, the Construction Manager will have this work performed and back charged to the appropriate Prime Contractor at prevailing overtime rates plus 15%. Notice to field personnel is deemed notice to this Prime Contractor.

7. Dust and fume control is essential to the reduction of health risks to the surrounding personnel. Methods of dust control shall include but not be limited to the following:

    a. Adequate ventilation.

b. Wetting down.
c. Keeping bags of insulating materials, cement, etc. closed.
d. Controlled mixing of materials under field conditions.
e. Special attention should be utilized in sawing of insulation and certain acoustical materials and storage of materials.
f. Job housekeeping must be maintained.
g. Advising all personnel of hazardous conditions, including supervisors and workmen.
h. Each Prime Contractor shall be responsible for instituting the above policies to insure minimal impact to surrounding occupied areas.

8. Each Prime Contractor shall confine operations on the premises to areas designated by the Construction Manager and permitted by law, ordinances, permits and the Contract Documents, and shall not unreasonably encumber the Premises with any materials or equipment. The Prime Contractor shall coordinate all of his operations with, and secure approval from, the Construction Manager, before using any portion of the Premises. Field personnel are to be confined to the work area assigned.

9. Where material is specified to be furnished by others or furnished and delivered only, the Prime Contractor installing the material shall be responsible for scheduling the delivery and receiving, unloading, storing, handling, relocating, hoisting, distribution, laying out and installing this material. Upon receipt by the Prime Contractor installing the material, risk of loss and damage shall be borne by that Contractor.

10. All Prime Contractors and their subcontractors shall allow sufficient time to inspect and accept the work of the previous Contractors. Should any discrepancies be discovered, The Construction Manager shall be notified sufficiently in advance so that corrective action can be agreed to and taken (by all necessary parties) without affecting the progress of any Contractor or the work.

11. All Prime Contractors are advised to exert utmost care and diligence when working in or near any existing buildings or site work which is to remain. The absence of protection around such items shall not excuse the Prime Contractor from his liability to provide protection. Any damages to the existing buildings, sitework or facilities shall be repaired and expensed to the responsible Prime Contractor.

12. Each Prime Contractor shall be solely responsible to remove and replace the existing ceiling tiles and grid in areas of the existing building where their work is required but new ceilings are not scheduled. In the event that the existing ceilings are damaged and cannot be replaced to the satisfaction of the Owner, the responsible Prime Contractor shall be solely responsible for replacing, in kind, the existing ceilings with new tile and grid. A qualified Contractor, acceptable to the Owner, shall perform all ceiling replacements.

13. All disconnect and/or tie-in work involving any utilities that would interfere with the ongoing operations of the Owner shall be completed on an after-hours basis. The performance of this work shall be projected on the required schedules and the Owners Representative is to be notified at least forty-eight hours in advance of commencing with this work. All overtime and standby personnel necessary to complete these tie-ins shall be the responsibility of the Prime Contractor performing the work.

14. At the same time the Prime Contractor submits their Insurance Certificate they shall also submit to the Construction Manager the labor rates of each category of labor for which he or his subcontractors shall employ (either directly or indirectly). This information shall be itemized in the format shown below.

Contractor's Name	
Contractor's Address	
Contractor's Office Phone	
Contractor's Fax Number	
Contractor's Email Address	

Labor Rate Breakdown					
Worker's Title		**Journey man**	**1.5 Rate**	**Fore man**	**1.5 Rate**
Base Hourly Rate					
Payroll Tax & Insurance:	**% Per Hr**				
FICA					
Federal Unemployment					
State					
Workers Compensation					
Disability					
Other (Explanation Required)					
Subtotal					
Benefits:	**$ Per Hr**				
Vacation					
Health & Welfare					
Pension					
Annuity					
401K Fund					
Other (Explanation Required)					
Other (Explanation Required)					
Subtotal					
Hourly Labor Rate					

X. REQUEST FOR INFORMATION (RFIs)

1. Refer to the specifications for a complete explanation of the Request For Information process, and copy of the RFI form. RFIs will be corresponded electronically and will be required for an interpretation needed by the Architect of the Drawings and Specifications.

XI. TESTING/INSPECTIONS

1. If NYSED, the Architect or Owner or determines that any work requires special inspection, testing or approval, the Construction Manager will instruct the Prime Contractor of such special inspection, or testing. If such special inspection or testing reveals a failure of the work to comply with the requirements of the Contract Documents, the Prime Contractor shall bear all costs thereof, including compensation for the Architect's, Construction Manager, and Testing Lab costs.

2. Contractor shall furnish incidental labor to:
    a. Provide access to the work to be tested, sampled, and inspected.
    b. Obtain and handle samples at the project site or at the source of the product to be tested.
    c. Facilitate inspections, samplings and tests.
    d. Coordinate with the Owners Rep and testing lab and submit schedule of required tests one week in advance.
    e. Coordinate inspections

3. As they relate to the timely prosecution of the work, all Prime Contractors shall coordinate independent testing and inspections. If any Prime fails to coordinate such inspections and additional costs are incurred to the Owner, the Prime Contractor will be responsible for that inspection cost.

4. **The following is a list of intended controlled inspections:**
    a. Soil bearing, sub-grade inspection and/or compaction
    b. Concrete field and plant testing & rebar placement
    c. Masonry or stone field inspection, mortar sampling, reinforcement placement inspection
    d. Structural steel field welding, bolting, connections, and metal deck
    e. Asphalt and sub-base inspection
    f. Soil compaction, density and sieve analysis testing, soil bearing
    g. Water and air infiltration for windows
    h. Roofing, flashing, waterproofing
    i. Under slab plumbing work
    j. Firestopping
    k. Fireproofing
    l. Asbestos air monitoring

5. The Architect and Construction Manager shall be notified forty-eight hours prior to the need of testing, in the event the Contractor does not give proper notification and the work is done with no test, that Contractor will bear all costs for such tests.

6. ***All controlled inspection testing costs will be paid for by the Owner except as noted above.***

7. As part of the two-week look ahead, the Prime Contractor shall provide the Construction Manager with a schedule of all anticipated on-site Owner supplied inspections (if any are required). The Prime Contractor shall submit all requests for Owner-supplied inspection for all items of controlled inspection by 1:30 p.m. of the day previous.

XII. CHANGES TO THE WORK

1. Refer to Article 8 of the General Conditions for additional information pertaining to this subject.

2. All change proposals for extra work by the Prime Contractors shall be submitted to the Construction Manager, with a complete labor and material breakdown and on the basis of net difference in quantities. The Owner reserves the right to request adequate back up such as invoices, subcontractor quotes, etc., to substantiate the change order cost. Current labor rates for all trades are to be submitted to the Construction Manager by the respective Prime Contractors at the first scheduled job meeting. When both additions and deductions are involved in any one change, the allowance for overhead and profit shall be figured on the basis of net increase or decrease.

   All change requests shall follow the cost breakdown found in Paragraph 'C' of Article 8 located in the General Conditions.

XIII. SCHEDULE OF VALUES/PAYMENTS

1. Within one week after Notice to Proceed, the Prime Contractor shall submit a detailed billing breakdown on the AIA G702/ G703 form for approval by Construction Manager. No payments will be made until such billing breakdown is approved.
2. The schedule of values will be reviewed and adjusted if necessary. Once approved, the schedule of values is to be used for the AIA pay application. The schedule of value will take into account and include at minimum the following items:

   a. Bond/insurance based on actual invoice amount
   b. Labor and material on line items as applicable
   c. Submittals - 1% of contract sum
   d. Punch list - 1% of contract sum
   e. Close-out documents/warranties - 3% of the contract sum
   f. Meeting Attendance & Meeting Documentation - 2% of the contract sum
   g. Allowances
   h. Approved Alternates
   i. Labor and Material breakdown for each line Item

   Note: Punch list value will be dispersed only when the work has been confirmed to be completed 100%. ALL PAYMENT APPLICATIONS SHALL INCLUDE A 5% RETAINAGE FACTOR.

3. The Owner has elected to require the Prime Contractor to submit releases of liens with respect to all Work previously performed and for which payments were made under a preceding application. Beginning with the second payment requisition and with each subsequent payment requisition, each Prime Contractor shall furnish to Owner the following documents:
   a. Labor and/or Materials Affidavit
   b. Daily and Weekly Wage Affidavit

c. Prime Contractor's-Partial Release and Wavier of Lien

4. Monthly Payment Applications for Payments shall be made as per Article 9 of the General Conditions of the Contract
5. All Payment Applications for Payment are to include certified payroll for each employee working directly under the Prime Contractor, as well as all subcontractors working under agreements with the Prime Contractor.

XIV. PUNCH LIST

1. Upon substantial completion of each phase of work, the Prime Contractors are to submit to the Owner/Construction Manager a letter declaring the work is substantial complete. Included with said letter is to be the Contractor's punchlist. Upon the receipt of above, the Construction Manager will schedule with the Owner, Architect, and Contractor a walk through to develop a single final punchlist. This single final punchlist agreed by all parties shall serve as the only punchlist. Upon failure to complete the final punchlist within two weeks from receipt, the Owner reserves the right to complete same work and backcharge the costs of material, labor, supervision and other incidental costs.

XV. INSURANCE/INDEMNIFICATION

1. All Prime Contractors must issue a Certificate of Insurance with liability limits as defined in the Construction Documents naming Triton Construction Company, The Architect, The Architect's Consultants and the School District as an 'Additional Insured' in addition to all other parties as stipulated in the General Conditions of the Contract in the project manual.
2. All Prime Contractors agree to indemnify and hold harmless Triton Construction Company, The Architect, The Architect's Consultants, the School District, its agents and employees in addition to all other parties as stipulated in the General Conditions of the Contract in the project manual.
3. All Prime Contractors and Sub-Contractors/sub-subcontractor's/vendors/etc. insurance/indemnification shall comply with Article 11 "Insurance" as specified in the General Conditions of the Contract in the project manual.

Specific Scope Requirements for Each Prime Contractor

Each Prime Contractor is to refer to the technical specifications and drawings for further, or more comprehensive requirements.

Prime Contractor for General Construction (PCGC)

1. This Prime Contractor shall provide, for all the building construction work, all necessary site refuse containers and disposal services to maintain the site in a clean and safe condition. This Prime Contractor shall be responsible for emptying and/or replacing all containers on a regular basis or when full. All containers and disposal services shall be provided by a single entity. This Prime Contractor shall provide

sufficient labor to keep the site clean on a daily basis and shall be responsible for providing the daily broom cleaning as necessary to maintain site safety.

2. This Prime Contractor shall coordinate with the; Electrician, Plumber and Mechanical Contractors to allow all Contractors unabated access to the building and surrounding work areas.
3. This Prime Contractor shall provide and maintain temporary chemical toilets for the duration of the project at the New Addition and the Renovations. The quantity of these toilets should be as required to properly maintain sanitary facilities and easy access for the personnel on the job. This quantity shall be a minimum of two toilets per major work area. This requirement shall include all necessary paper products, supplies and services, as well as the maintenance of these toilets until all work is complete and the Owner assumes partial occupancy of the building additions and renovations. As a minimum, this Contractor shall include the pumping and servicing of these toilets twice per week.
4. All Scaffolding or stair towers shall be designed and stamped by a licensed NYS PE. When designing this scaffolding consideration should be given to the environment, scaffolding system being used, means of access, means of tying the scaffolding to the structure, location, length of time to be erected, climate conditions, wrapping/containment of building, purpose of use, loadings, etc. all scaffolding and/ or stair tower access points must be secured while not in use. If and when needed, the scaffolding may be used for access by other Prime Contractors during construction- this contractor will not restrict access by others using the scaffold.
5. This Prime Contractor shall provide testing and inspection of the scaffolding on a daily basis and per governing regulation (e.g.,: OSHA). A log of these inspections are to be kept in the PCGC's job trailer, along with inspections tags that identify the status of the scaffolding (inspection dates, okay to use, caution, danger). Report to the Construction Manager all corrective work required through the course of the project.
6. As shown on the logistics plan, this Prime Contractor shall include in his bid price, all costs to provide an **8' ht.** rental type chain link construction fencing and gates. All fencing shall have a tightly woven, blind screen mesh installed on the "construction" side of the fence. Mesh to be dark green or black. When directed by the Construction Manager, this Prime Contractor shall remove and dispose of this fencing and all related materials. Gates for man access shall be passive to the exterior of the jobsite during the event of an emergency, but remain closed for un-authorized entry during construction. All gates shall be locked when the site is not active, with a double-keyed system, granting the District access to the site after-hours. Included in his bid price, this Prime Contractor shall allow a 1,000lf allowance of orange netting, to be used at the direction of the CM, Architect or Owner.
7. This Prime Contractor shall perform its steel erection according to their Site Logistics/Safety Plan. Booming steel over the Existing Building will not be permitted while occupied. Steel erection within 20 feet of an occupied building/space will require after-hours crane picks.
8. This Prime Contractor will repair, replace, correct, or finish grade, topsoil, and seed all areas with-in the construction site that was disturbed by the work of this project.
9. This Prime Contractor shall provide and maintain all temporary plastic barriers, partition walls, doors, hardware and plywood barriers for the duration of the project to separate work areas from public areas and to maintain security, dust, and noise control. Temporary partitions and doors will be painted with 1x coat of primer and 2x coats of paint for esthetics.

10. Construction Signage. The Prime Contractor shall include in his base price all construction signage required by OSHA. At the site fence, "Construction Area keep out", "Hard Hats Required" and "Authorized personal only" signage shall be posted every 10' on site fencing. This Prime Contractor shall reference the logistics plans for each project to include any other signage designated for entry gates. Signs shall be made of either metal of durable PVC to endure the project duration.

    The Prime Contractor shall also include signage for COVID-19 protection, alike the construction signage, stating "Keep Social Distance", "Wear Mask" and "Sanitize Frequently".

11. Professional Cleaning: The PCGC shall provide a professional commercial cleaning service to prepare all areas of interior construction for use and to provide a final cleaning after substantial completion is achieved and after direction to provide such service is received form the Construction Manager. This work shall be completed in cooperation with the building maintenance staff and their respective procedures. As part of this service, the PCGC shall wax all new or repaired floors, and, wash or clean all walls, doors, windows, frames, casework, blinds, unit ventilators, shelves, counters, toilet fixture, sinks, equipment, etc. All work shall be performed in place or on site and does not include sending items out for service or special cleaning operations.
12. Unless specifically noted on the contract documents, this Prime Contractor will provide all concrete equipment pads as shown on the contract documents. All other primes will provide pad sizes and locations.
13. This Prime Contractor is responsible for protection of finished work. Including but not limited to; floors, walls, and doors. This Prime Contractor will provide, maintain, and remove the appropriate protection materials necessary to adequately protect his finished product.
14. This Prime Contractor should note there are numerous areas where the existing ceilings are remaining. This Contractor will be required to remove and reinstall any ceilings displaced by installation of this Contractor's Work. If open ceilings are not replaced within a twenty-four hour period after a request by the Construction Manager, either verbal or written, the Construction Manager will have said ceilings reinstalled and all related costs will be back charged to said Contractor.
15. Unless otherwise noted in the construction documents, this Prime Contractor will repair and patch all walls, floors, and ceilings to match adjacent finishes after the removal of interior partitions, ceilings, floors, M.E.P. SP. Conduit, piping and ductwork. This includes all walls and ceilings above finished ceilings or spaces. Each Prime Contractor will cut and cap their own work inside finished walls, floors and ceilings.
16. Snow Removal: This Prime Contractor shall provide all equipment, tools and labor for snow removal to assure work can continue through the winter months. Any accumulation of snow in the areas within the construction fencing and directly outside of the fenced-in area, shall be removed immediately by this Prime Contractor. The contractor will work in-hand with the District with their snow removal efforts to ensure access to the site.
17. Temporary Heat: As dictated by the bid schedule this Prime Contractor shall provide temporary heat from November thru December for the New Addition. This is to assure that the work of all trades can continue through the winter months. This includes temporary heating equipment, fuel, fire watch, necessary labor/supervision, ventilation, temporary enclosures etc. In no case shall the temperature be less than 50 degrees F. Temporary heating plants using electric power as an energy source can be used with prior authorization by the Architect/CM/Owner/

18. Building Containment/Wrap: **(IF NOT COMPLETE WITH MASONRY AND TEMPERATURE-SENSITVE MATERIALS, and IF WINDOWS DOORS ARE NOT INSTALLED BY HEATING PERIOD**) This Prime Contractor shall wrap the New Addition. The PCGC must wrap in whole structure between November and December to assure that the interior construction can continue through the winter months. As needed to complete the Building Watertight Milestone, the PCGC shall install temporary enclosures to each building addition opening (windows, doors, louvers, clerestory, storefront, etc.) in order to achieve an environment capable of being temporarily heated should the windows and doors not be installed (Typical temporary WINDOW/DOOR enclosure consist of ¾" CDW Plywood over 3 5/8" metal stud.
19. This Prime Contractor shall use winter concrete design mix using Pozitec or Accelguard 80 for all concrete work when temperatures reach 40 F or below.
20. This Prime Contractor will be responsible to provide safe egress between floors, which may include the use of temporary stairs w/hand rails; temporary wood treads in metal pan stairs until concrete is poured, ladders, etc. immediately after completion of the structural steel.
21. This Prime Contractor shall provide fire extinguishers for the life of the project, the extinguishers are to be hung and identified as per OSHA requirements (1 per 3000 sq ft, or better). These extinguishers are to be re-charged and inspected for the life of the project.
22. This Prime Contractor shall furnish, install, and maintain an OSHA (3) three line guardrail system (toe board, 2 mid rails and top rails) @ stairwells, open slab edges, MEP shafts, elevator shafts and other openings leading to fall hazards.
23. This Prime Contractor shall furnish, install, and maintain perimeter protection at all floors and roof areas of the new additions. Theses safety cables must meet all OSHA requirements. The safety cables must be installed with turnbuckles in such a manner as to allow access to the exterior of the building for completion of work by others.
24. If due to location of fabrication plant, a local storage yard is required, all cost associated with this storage yard including receiving, unloading, storing, shake-out, reloading, and delivery to the site shall be this Prime Contractors' cost.
    a) The Owner may have an Inspector at the plant during the fabrication period. Appropriate access shall be provided at all times for this individual.
25. Prior to each floors lift the Prime Contractor shall provide a survey by a NYS licensed surveyor, with no less than 5 years' experience, indicating wall plumbness and slab elevation prior to final bolting/welding.
26. Shoring/ Support of Excavation: This Prime Contractor will be responsible for hiring a license NYS PE to design a shoring and underpinning plan in effort to build adjacent to existing structures.
27. Stormwater/Underground Drainage: This Prime Contractor will be responsible to install stormwater structures and piping associated with the New Addition work. Stormwater and ponding during the period where final connections have yet to be made will be managed by this Prime Contractor. Ponding of water within or directly outside the site due to construction activities will be mitigated by this Prime contractor by removing the water by pumping or with re-grading the disturbed area.
28. Soil Erosion: This Prime Contractor will be responsible to establish and maintain a soil erosion fence around the disturbed site during the entirety of construction, until authorized by the Civil Engineer/Architect to remove such provisions. This Prime contractor will also provide erosion control at each existing and new nearby storm basin structure. Reference shall be made to the construction plans & documents for additional Soil Erosion provisions required by this Prime Contractor.
29. Abatement Work: This Prime Contractor will be responsible to hire a qualified and DOL licensed Abatement Contractor to perform ALL Hazardous Material removal at areas indicated in the drawings.

This work will only take place during the summer recess or over an extended break/holiday such as Spring Break. If the work is unable to be completed by the end of the summer or extended holiday break, abatement will only take place during other holiday weeks, or when students are no occupying the building for extended periods.

30. Under slab **MEP Trenching at New & Existing Slabs**: This Prime contractor will be responsible to coordinate with the MEP Prime contractors and Construction Manager through the Contract Documents and the Coordination Drawings, for any under-slab piping. This Prime Contractor (PCGC) will be responsible to provide the trenching, bedding, backfill and compaction for such MEP under-slab items. Each MEP Prime Contractor will be responsible to provide a final layout to the PCGC, prior to trenching. Each MEP Prime contractor will be responsible to level their piping with provided bedding from the PCGC, testing the piping prior to back filling.

    This Prime contractor will be responsible to survey, sawcut, trench, lay bedding, backfill trench, dowel existing slab and place new concrete to be level to receive new floor finishes. Where slabs are receiving new floors, this Prime Contractor (PCGC) will provide any corrective patching to the top-of-slab and install the new finish floor. Where existing flooring is to remain and be patched; this Prime Contractor will be responsible to match the existing finish, prepare and install new material, at approval of the Architect and CM.

31. Sanitary: This Prime General Construction Contractor will be responsible to install sanitary structures and piping associated with the civil utility work for the New Addition. All tie-ins to existing structures and new structures by this Prime Contractor; includes all required testing. Piping shall be brought to 5' outside the building to be picked up by PCP, continuing into the inside of the building.
32. This Prime Contractor will provide new ductwork penetrations greater then 12"x12" for the PCM, PCE and PCP in walls, ceilings, or floors, as well as any structural support necessary.
33. Each Prime Contractor is required to fire stop and/ or smoke stop all walls, floors and ceilings after completion of all their own work.
34. This Prime Contractor will hire the services of an underground utility surveyor to locate and mark all existing underground utilities and services with-in the Area of Work.
35. This Prime Contractor is responsible for protection of finished work. This Prime Contractor will provide, maintain, and remove the appropriate protection materials necessary to adequately protect finished product.
36. This Prime Contractor will repair, replace, correct, or finish grade, topsoil, and seed all areas with-in the construction site that was disturbed by the work of this project, including any staging areas for material and equipment.
37. New Mechanical Roof Top Units and Exhaust Fans will be furnished and installed by the Mechanical Contract Prime, with final Electrical/ Fire-Alarm terminations by the Electrical Prime under separate contracts. Roof Top Curbs will be furnished, lifted/picked, and set/installed by the Mechanical Contract Prime. Blocking for curbs, final flashing, roof deck penetrations/openings and structural reinforcing shall be by the PCGC Prime. Coordination between each trade to install the roof system in a seamless matter is required per each Prime's contract. The following sequence clarifies the coordination between the General Construction Prime (PCGC), Mechanical (PCM) and Electrical (PCE) trades for New Mechanical RTU/ Exhausts Fan Equipment:
    A. Roof Top Unit Curbs:

1. Furnished, coordinated, lifted/picked and installed (excludes roof flashing) by Mechanical (PCM) Prime
2. Deck/Roof Opening, Structural Reinforcing, Blocking, Insulation and Roof Flashing by General Construction (PCGC) Prime
3. Pipe Portals/ Pitch Pockets Furnished by Mechanical (PCM) Prime
4. Pipe Portals/ Pitch Pockets Installed and Flashed by General Construction (PCGC) Prime

B. Rooftop Dunnage
1. Furnished, coordinated, lifted/picked and installed by General Construction (PCGC) Prime
2. Deck/Roof Opening, Structural Reinforcing, Blocking, Insulation and Roof Flashing by General Construction (PCGC) Prime

C. Mechanical Equipment (RTUs):
1. Furnished, hoisted/picked and installed by Mechanical (PCM) Prime
2. Piping by Mechanical (PCM) Prime
3. Ductwork by Mechanical (PCM) Prime
4. Controls by Mechanical (PCM) Prime
5. Electrical by Electrical (PCE) Prime
6. Fire Alarm/ Shutdowns by Electrical (PCE) Prime

Temporary protection of open curbs prior to units being installed, will be provided and maintained, by the General Construction Contractor in cooperation of all other trades. Water infiltration as a result the Mechanical or Electrical Prime not re-protecting open roof curbs, will be the sole responsibility of that trade to reimburse the PCGC Prime - to correct the temporary protection. Any damages to the interior finishes of the building, caused by water infiltration, will be the responsibility of that Prime Contractor causing the leak, to correct the damages per the terms of the General Conditions.

38. Wood Flooring Replacement: This Prime Contractor will not perform more work than what can be replaced in a 72 hour window. This is in order to protect the School District from the contractor not being able to finish his work by the end of the summer, and to turn rooms over to the district periodically. Rooms must start being turned over to the District no later than July 25, 2021 and be complete no later than August 20, 2021.
    j) This Prime Contractor will furnish a mockup for the Architect to review prior to commencing with the replacement of any rooms. The mockup will include conditions that include specific details of typical features in each classroom and may be subject rejection.
    k) This Prime Contractor will mitigate dust from entering the hallway from each room. Dust and debris encountered in the hallways, will be the responsibility of this Prime Contractor to clean.
    l) This Prime Contractor will provide a finished floor system per the direction of the Contract Documents. The flooring system will be turned over to the Owner for use without requirement any cleaning or further work. it will be the responsibility of this contractor to provide a dust-cleaning at each room, including but not limited to: shelves, window sills, unit ventilators, radiators, casework and equipment.

Prime Contractor for Plumbing (PCP)

1. The Prime Contractor for General Construction (PCGC) shall provide dumpsters for this trade. Each Prime Contractor is responsible for collecting, moving, placing, breaking down boxes and pallets, and disposing

rubbish, on a daily basis, all debris from their activities into a dumpster supplied by the PCGC. Each Prime Contractor is responsible to broom clean the areas they worked in at the end of each day.

2. The PCP shall use the dedicated staging areas for the PCP's Construction Field Office. The PCP will be required to remove and reinstall the fencing that surrounds this location for installation of the PCP's construction office. The PCP will be required to install electric, sanitary, water, phone, cable etc. at the PCP's expense. Electric bills to the trailer only will be paid by the Owner.
3. he expediting of *out of sequence hookup* of roof drain piping must be included within this Prime Contractor's base bid to help prevent excessive water from entering into the new/existing building.
4. The Prime Contractor for Plumbing shall include, as part of his base price, all costs associated with providing one hose bib for temporary water service at each major building addition area (if this hose bib does not already exist). The Prime Contractor for Plumbing shall install these hose bibs at locations designated by the Construction Manager.
5. The Prime Contractor for Plumbing should note there are numerous areas where the existing ceilings are remaining. This Contractor will be required to remove and reinstall any ceilings displaced by installation of this Contractor's Work. If open ceilings are not replaced within a twenty-four hour period after a request by the Construction Manager, either verbal or written, the Construction Manager will have said ceilings reinstalled and all related costs will be back charged to said Contractor.
6. This Prime Contractor shall coordinate with the Electrician, General Contractor, and Mechanical Prime Contractors to allow all Contractors unabated access to the building.
7. Unless otherwise noted in the construction documents, this Prime Contractor will cut and cap their own work inside finished walls, floors and ceilings.
8. Each Prime Contractor is required to fire stop and/ or smoke stop all walls, floors and ceilings after completion of all their own work.
9. This Prime Contractor is responsible for protection of finished work. This Prime Contractor will provide, maintain, and remove the appropriate protection materials necessary to adequately protect his finished product.
10. <u>Trenching under slab (New/Existing):</u> This Prime contractor will be responsible to layout all locations for any under slab piping. The Prime Contractor for General Construction will be responsible to include trenching provisions for under-slab (New or Existing) work where indicated on the plans at new slab locations. This Prime Contractor (PCP) will lay all piping, leveling piping, test and allow the PCGC to backfill in time not to disturb the overall project schedule. This Prime Contractor for General Construction (PCGC) will be responsible to sawcut any existing slabs required to install piping, trench, lay bedding and patch the slab to accept new finishes.
11. Stormwater "Roof Drains and Piping": This Prime General Construction Contractor will be responsible to connect to the stormwater piping 5' outside the building foundation. This contractor will be responsible to core drill, seal and install all piping from 5' outside the building- into the building.
12. Sanitary: This Prime General Construction Contractor will be responsible to connect to the sanitary piping 5' outside the building foundation. This contractor will be responsible to core drill, seal and install all piping from 5' outside the building- into the building.

13. Any openings in excess 12”x12” in walls, or slabs, will be provided by the PCGC prime contractor at the new additions and renovations. This Prime Contractor (PCP) will be responsible for all other small opening, including saw cutting, core-drilling and alike.

Prime Contractor for Mechanical (PCM)

1. The PCGC shall provide dumpsters for this contractor to use for day-to-day rubbish. Each Prime Contractor is responsible for collecting, moving, placing, breaking down boxes and pallets, and disposing rubbish, on a daily basis, all debris from their activities into a dumpster supplied by the PCGC. Each Prime Contractor is responsible to broom clean the areas they worked in at the end of each day. **This Prime Contractor will include in his bid price the provision to remove large HVAC equipment from the site, at his own costs, including but not limited to RTUs, Chillers, Cooling Towers, Unit Ventilators, and Air Handlers.** All other debris is to be disposed of in the PCGC’s dumpsters.
2. This Prime Contractor for Mechanical should note there are numerous areas where the existing ceilings are remaining. This Contractor will be required to remove and reinstall any ceilings displaced by installation of this Contractor’s work. If open ceilings are not replaced within a twenty-four hour period after a request by the Construction Manager, either verbal or written, the Construction Manager will have said ceilings reinstalled and all related costs will be back charged to said Contractor.
3. Equipment Pads: Unless specifically noted on the contract documents, the Prime General Construction Contractor will provide all **interior and exterior** concrete equipment pads whether shown on the contract documents or not.
4. This Prime Contractor shall coordinate with the Roofing Contractor, Electrician, Plumber, and General Construction Prime Contractors to allow all Contractors unabated access to the building.
5. Unless otherwise noted in the construction documents, this Prime Contractor will cut and cap their own work inside finished walls, floors and ceilings.
6. Each Prime Contractor is required to fire stop and/ or smoke stop all walls, floors and ceilings after completion of all their own work.
7. This Prime Contractor is responsible for protection of finished work. This Prime Contractor will provide, maintain, and remove the appropriate protection materials necessary to adequately protect his finished product.
8. Both louvers openings, pipe and duct-work openings in excess 12”x12” in walls, or slabs, will be provided by the PCGC prime contractor at the new additions. This Prime Contractor (PCM) will be responsible for all other openings, including saw cutting, core-drilling and alike.
39. New Mechanical Roof Top Units and Exhaust Fans will be furnished and installed by the Mechanical Contract Prime, with final Electrical/ Fire-Alarm terminations by the Electrical Prime under separate contracts. Roof Top Curbs will be furnished, lifted/picked, and set/installed by the Mechanical Contract Prime. Blocking for curbs, final flashing, roof deck penetrations/openings and structural reinforcing shall be by the PCGC Prime. Coordination between each trade to install the roof system in a seamless matter is required per each Prime’s contract. The following sequence clarifies the coordination between the General Construction Prime (PCGC), Mechanical (PCM) and Electrical (PCE) trades for New Mechanical RTU/ Exhausts Fan Equipment:
    A. Roof Top Unit Curbs:

1. Furnished, coordinated, lifted/picked and installed (excludes roof flashing) by Mechanical (PCM) Prime
2. Deck/Roof Opening, Structural Reinforcing, Blocking, Insulation and Roof Flashing by General Construction (PCGC) Prime
3. Pipe Portals/ Pitch Pockets Furnished by Mechanical (PCM) Prime
4. Pipe Portals/ Pitch Pockets Installed and Flashed by General Construction (PCGC) Prime

B. Rooftop Dunnage
1. Furnished, coordinated, lifted/picked and installed by General Construction (PCGC) Prime
2. Deck/Roof Opening, Structural Reinforcing, Blocking, Insulation and Roof Flashing by General Construction (PCGC) Prime

C. Mechanical Equipment (RTUs):
1. Furnished, hoisted/picked and installed by Mechanical (PCM) Prime
2. Piping by Mechanical (PCM) Prime
3. Ductwork by Mechanical (PCM) Prime
4. Controls by Mechanical (PCM) Prime
5. Electrical by Electrical (PCE) Prime
6. Fire Alarm/ Shutdowns by Electrical (PCE) Prime

Temporary protection of open curbs prior to units being installed, will be provided and maintained, by the General Construction Contractor in cooperation of all other trades. Water infiltration as a result the Mechanical or Electrical Prime not re-protecting open roof curbs, will be the sole responsibility of that trade to reimburse the PCGC Prime - to correct the temporary protection. Any damages to the interior finishes of the building, caused by water infiltration, will be the responsibility of that Prime Contractor causing the leak, to correct the damages per the terms of the General Conditions.

Prime Contractor for Electrical (PCE)

1. The Prime Contractor for General Construction (PCGC) shall provide dumpsters. Each Prime Contractor is responsible for collecting, moving, placing, breaking down boxes and pallets, and disposing rubbish, on a daily basis, all debris from their activities into a dumpster supplied by the PCGC. Each Prime Contractor is responsible to broom clean the areas they worked in at the end of each day.
2. **The Prime Contractor for Electrical is to temporarily support existing ceiling mounted equipment/devices (i.e., speakers, fire alarm apparatuses, exit signs, wiring, light fixtures, etc.) as required for demolition of existing ceilings until new equipment/devices are installed or existing equipment/device can be permanently remounted in the new ceiling. This includes all fixtures and devices within the Multi-purpose room and first floor corridor where ceilings will be removed.**
3. The Prime Contractor for Electrical shall provide and keep temporary light and power operational for a period of from fifteen minutes before the earliest starting time of the earliest trade, to fifteen minutes after the established quitting time of the trade which stops latest in the evening (fifteen foot candles) throughout the entire building (normal working hours 7:00 am to 4:00 pm). This applies to all scheduled workdays, Monday through Saturday inclusive, which are established as regular workdays for any trade engaged in the work, including such days that are holidays for Electricians but are regular workdays for other trades. These services are to be kept operational until the CM determines that they are no longer required for the execution of the work. Temporary light shall consist of a minimum of (1) bulb and cage

per 10 square feet of floor space in all spaces no matter of size throughout the existing building spaces being renovated..

4. The Prime Contractor for Electrical shall include in his base price all costs associated with providing and maintaining adequate temporary light and power to all areas of work required by the construction documents. Each major area of work shall be provided with an adequate sized distribution panel for temporary light and power
5. The Prime Contractor for Electrical shall provide temporary power for masonry work, mixers, steel work, or fire proofing work, compressors etc. that may require 220V temporary power. Power is to be provided at each major area of work if required.
6. The Prime Contractor for Electrical should note there are numerous areas where the existing ceilings are remaining. This Contractor will be required to remove and reinstall any ceilings displaced by installation of this Contractor's work. If open ceilings are not replaced within a twenty-four hour period after a request by the Construction Manager, either verbal or written, the Construction Manager will have said ceilings reinstalled and all related costs will be back charged to said Contractor.
7. The Prime Contractor for Electrical shall replace all burned out light bulbs, within the work areas, when building is turned over to the owner at substantial completion.
8. This Prime Contractor shall coordinate with the, Roofing Contractor, General Contractor, Plumber, and Mechanical Prime Contractors to allow all Contractors unabated access to the building.
9. Unless otherwise noted in the construction documents, this Prime Contractor will cut and cap their own work inside finished walls, floors and ceilings.
10. Each Prime Contractor is required to fire stop and/ or smoke stop all walls, floors and ceilings after completion of all their own work.
11. This Prime Contractor is responsible for protection of finished work. This Prime Contractor will provide, maintain, and remove the appropriate protection materials necessary to adequately protect his finished product.
12. This Prime Contractor will modify all existing Fire Alarm devices that are part of the existing building being renovated, maintain the devices throughout construction, and or disconnect as needed. This Prime Contractor will assure that no troubles exist, by hiring a Fire Alarm vendor who is licensed to modify the existing Fire Alarm system to accept any temporary changes through construction. If any work compromised the Fire Alarm system during academic hours, then modification shall happen after hours.
13. This Prime Contractor is to develop a separate site-specific electrical service shutdown/upgrade schedule within four weeks after Notice to Proceed. This schedule will be developed in conjunction with the Construction Manager and the Owner. No shutdown/transfer will be permitted at any time without prior written notification. The Prime Contractor for Electrical shall provide temporary power for all 'others' work ongoing at the site during any electrical shutdown or transfer period that would otherwise deny other Contractors power. No shutdown or transfer shall be allowed during active school hours. Any and all shutdowns must be scheduled on the Owners off days (weekends, holidays). Any shutdown longer than three days will require this Prime Contractor to supply temporary power for the Owner (i.e., generators). The Electrical Prime Contractor shall provide a minimum of forty-eight hours' notice to the Owner and the Construction Manager or any necessary power shutdown.

9. Trenching under slab (New/Existing): This Prime contractor will be responsible to layout all locations for any under slab piping. The Prime Contractor for General Construction will be responsible to include trenching provisions for under-slab (New or Existing) work where indicated on the plans at new slab locations. This Prime Contractor (PCE) will lay all piping, leveling piping and allow the PCGC to backfill in time not to disturb the overall project schedule. This Prime Contractor for General Construction (PCGC) will be responsible to sawcut any existing slabs required to install piping, trench, lay bedding and patch the slab to accept new finishes.
10. Any openings in excess 12”x12” in walls, or slabs, will be provided by the PCGC prime contractor at the new additions and renovations. This Prime Contractor (PCE) will be responsible for all other small opening, including saw cutting, core-drilling and alike.
40. New Mechanical Roof Top Units and Exhaust Fans will be furnished and installed by the Mechanical Contract Prime, with final Electrical/ Fire-Alarm terminations by the Electrical Prime under separate contracts. Roof Top Curbs will be furnished, lifted/picked, and set/installed by the Mechanical Contract Prime. Blocking for curbs, final flashing, roof deck penetrations/openings and structural reinforcing shall be by the PCGC Prime. Coordination between each trade to install the roof system in a seamless matter is required per each Prime’s contract. The following sequence clarifies the coordination between the General Construction Prime (PCGC), Mechanical (PCM) and Electrical (PCE) trades for New Mechanical RTU/ Exhausts Fan Equipment:
    A. Roof Top Unit Curbs:
        1. Furnished, coordinated, lifted/picked and installed (excludes roof flashing) by Mechanical (PCM) Prime
        2. Deck/Roof Opening, Structural Reinforcing, Blocking, Insulation and Roof Flashing by General Construction (PCGC) Prime
        3. Pipe Portals/ Pitch Pockets Furnished by Mechanical (PCM) Prime
        4. Pipe Portals/ Pitch Pockets Installed and Flashed by General Construction (PCGC) Prime
    B. Rooftop Dunnage
        1. Furnished, coordinated, lifted/picked and installed by General Construction (PCGC) Prime
        2. Deck/Roof Opening, Structural Reinforcing, Blocking, Insulation and Roof Flashing by General Construction (PCGC) Prime
    C. Mechanical Equipment (RTUs):
        1. Furnished, hoisted/picked and installed by Mechanical (PCM) Prime
        2. Piping by Mechanical (PCM) Prime
        3. Ductwork by Mechanical (PCM) Prime
        4. Controls by Mechanical (PCM) Prime
        5. Electrical by Electrical (PCE) Prime
        6. Fire Alarm/ Shutdowns by Electrical (PCE) Prime

    Temporary protection of open curbs prior to units being installed, will be provided and maintained, by the General Construction Contractor in cooperation of all other trades. Water infiltration as a result the Mechanical or Electrical Prime not re-protecting open roof curbs, will be the sole responsibility of that trade to reimburse the PCGC Prime - to correct the temporary protection. Any damages to the interior finishes of the building, caused by water infiltration, will be the responsibility of that Prime Contractor causing the leak, to correct the damages per the terms of the General Conditions.

14. This Prime Contractor for Electric shall include in their proposal procurement of a certified Sound System Contractor to provide and install the sound system as per the contract documents. The PCE shall ensure a complete turn-key system.
15. This Prime Contractor for Electric shall provide and install all labor, materials, and fixtures necessary for a fully functional PA system that is tied into the existing school PA system.

SECTION 012200 – UNIT PRICES

PART 1 - GENERAL

1.01 SUMMARY

A. This section specifies administrative and procedural requirements for handling and processing work associated with unit prices. Related documents include drawings and other general provisions of the Contract, including General Conditions and other Division 1 specification sections.

1.02 RELATED SECTIONS

A. Section 01 26 00 - "Contract Modification Procedures" for procedures for submitting and handling Change Orders.
B. Section 01 33 00 – “Submittal Procedures”

1.03 DEFINITIONS

A. Unit price is an amount incorporated in the Agreement, applicable during the duration of the Work as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, added to or deducted from the Contract Sum by appropriate modification, if the scope of Work or estimated quantities of Work required by the Contract Documents are increased or decreased.

1.04 PURPOSE

A. Unit prices stated on the Bid Form shall be used as a basis of compensation for increases, or decreases, in specified items of Work by Change Order in accordance with the General Conditions.

1.05 PROCEDURES

A. Include in unit prices all necessary material, plus cost of delivery, installation, insurance, overhead and profit.

B. When requested by the Architect/Engineer, submit data identified in the General Conditions supporting the unit price costs.

C. The Owner reserves the right to reject the Contractor’s measurement of work in place that involves the use of established unit prices and to have work measured at the Owner’s expense by an independent surveyor.

D. List of Unit Prices: A list of unit prices is included in Part 3 of this specification.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

3.01 LIST OF UNIT PRICES – **CONTRACT 2a (General Construction)**

A. Contract 2a (GC): Unit Price #2a-1 – Asbestos - Plaster & Wire/Wood Lathe:
Contractor to include performance of removal and disposal of one (1) Square Foot (SF) of friable asbestos-containing Plaster and associated wire/wood lathe/mesh.

B. Contract 2a (GC): Unit Price #2a-2 – Asbestos – Large Project Decon:
Contractor to provide a unit price for the installation, use and removal of one (1) Large Project Decontamination work area to perform asbestos abatement. Refer to Specification Section 028200. Unit price to be per enclosure and shall include all required prep work.

C. Contract 2a (GC): Unit Price #2a-3 – Asbestos – Small Project Decon:
Contractor to provide a unit price for the installation, use and removal of one (1) Small Project Decontamination work area to perform asbestos abatement. Refer to Specification Section 028200. Unit price to be per enclosure and shall include all required prep work.

D. Contract 2a (GC): Unit Price #2a-4 – Asbestos – OSHA Wash Station for Minor Project:
Contractor to provide a unit price for the installation, use and removal of one (1) OSHA Wash Station for Minor Project, Abatement under 10 SF. Refer to Specification Section 028200. Unit price to be per wash station and shall include all required prep work.

E. Contract 2a (GC): Unit Price #2a-5 - Masonry Repointing:
Contractor shall provide a unit price to perform masonry repointing as shown on detail 4/A8.21. Refer to Specification Section 040120. Unit price to be per square foot (SF) and includes all required prep work.

F. Contract 2a (GC): Unit Price #2a-6 - Single Brick Replacement:
Contractor shall provide a unit price to replace a single brick as shown on detail 2/A8.21. Refer to Specification Section 040120. Unit price is per brick replacement and includes all required prep work.

G. Contract 2a (GC): Unit Price #2a-7 - Area Brick Replacement:
Contractor shall provide a unit price to replace an area of brick as shown on detail 5/A8.21. Refer to Specification Section 040120. Unit price is for the square footage (SF) of replacement and includes all required prep work.

H. Contract 2a (GC): Unit Price #2a-8 – Masonry/Stone Restoration:
Contractor shall provide a unit price to perform masonry/stone restoration as shown on detail 6/A8.21. Refer to Specification Section 040142. Unit price is for the square footage (SF) of restoration and includes all required prep work.

I. Contract 2a (GC): Unit Price #2a-9 – Asbestos Wiring Insulation:
Contractor shall provide a unit price for removal and disposal of one (1) Linear Foot (LF) of Friable presumed asbestos-containing Wire Insulation.

J. Contract 2a (GC): Unit Price #2a-10 – Plaster Molding:
Contractor to provide a unit price for one (1) Linear Foot (LF) of plaster molding replacement in like and kind (Style ‘C’) in the Multi-Purpose Room per Note #25 on Drawings A1.00 and A1.20.

END OF SECTION 012200

SECTION 012300 – ALTERNATES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. This Section includes administrative and procedural requirements for alternates.

1.03 DEFINITIONS

A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the Bidding Requirements that may be added to or deducted from the Base Bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.

1. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

1.04 PROCEDURES

A. Coordination: Modify or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.

1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.

B. Execute accepted alternates under the same conditions as other work of the Contract.

C. Schedule: A Schedule of Alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.01 SCHEDULE OF ALTERNATES – **CONTRACT 2a (General Construction)**

A. Contract #2a (GC): Add Alternate No. 2a-1: Reconstruct ADA sidewalk ramps:

Contractor to provide a price to reconstruct two (2) concrete ADA sidewalk ramps per Drawing SC.01 and details on CS.02.

B. Contract #2a (GC): Add Alternate No. 2a-2: Masonry Façade Replacement (South and Partial West Elevations of MAS Building:

Contractor to provide a price to remove existing brick veneer and install new cavity drainage system and new brick veneer on the South and Partial West Elevations of the MAS Building per drawings A1.30, A3.01 and associated detail sheets.

C. Contract #2a (GC): Add Alternate No. 2a-3: Masonry Restoration Middle Building

Contractor to provide a price to perform masonry restoration of the Middle Building as depicted on drawings A3.02 and A3.03.

D. Contract #2a (GC): Add Alternate No. 2a-4: MAS Building First Floor Corridor Ceiling Replacement

Contractor to provide a price remove existing and install a new ceiling in the first floor Corridor of the MAS Building per Drawings A1.21 and A5.10.

E. Contract #2a (GC): Add Alternate No. 2a-5: Multi-Purpose Room Ceiling Replacement

Contractor to provide a price remove existing and install a new ceiling in the Multi-Purpose Room per Drawings A1.20 and A5.11

F. Contract #2a (GC): Add Alternate No. 2a-6: Multi-Purpose Room Flooring Replacement

Contractor to provide a price remove existing and install a new flooring in the Multi-Purpose Room per Drawings A1.03, A2.03 and A2.02.

G. Contract #2a (GC): Add Alternate No. 2a-7: Asbestos Abatement Multi-Purpose Room Stage Lighting Replacement.

Contractor to provide a price for the asbestos abatement associated with the replacement of Stage Lighting in the Multi-Purpose Room as per Drawings H1.07 and E4.01.

3.02 SCHEDULE OF ALTERNATES – **CONTRACT 2d (Electrical)**

A. Contract #2d (EC): Add Alternate No. 2d-1: MAS Building First Floor Corridor Ceiling Replacement (Electrical Work)

Contractor to provide a price for the electrical work associated with the removal of the existing and installation of new ceiling in in the first floor Corridor of the MAS Building per Drawings A1.21 and A5.10.

B. Contract #2d (EC): Add Alternate No. 2d-2: Multi-Purpose Room Ceiling Replacement (Electrical Work)

Contractor to provide a price for the electrical work associated with the removal of the existing and installation of new ceiling in the Multi-Purpose Room per Drawings A1.20 and A5.11

C. Contract #2d (EC): Add Alternate No. 2d-3: Multi-Purpose Room Stage Lighting Replacement

Contractor to provide a price for the removal of old and installation of new Stage Lighting in the Multi-Purpose Room as per Drawing E4.01.

END OF SECTION 012300

SECTION 012500 – SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

B. Refer to Article 6(X) of the General Conditions for requirements concerning substitutions.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for substitutions.

B. Related Requirements: Retain subparagraphs below to cross-reference requirements Contractor might expect to find in this Section but are specified in other Sections.

1. Section 016000 "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.

1.3 DEFINITIONS

A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.

1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.

2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required in order to meet other Project requirements but may offer advantage to Contractor or Owner.

1.4 PROCEDURES

A. If the Contractor desires to substitute any kind, type, brand, or manufacturer of material other than those named in the Specifications, the Contractor shall indicate the desired substitution in its bid, including the following:

1. For which specified material or equipment the request for substitution is being made;

2. What kind, type, brand, or manufacturer is sought to be substituted for the specified items;

3. Written documentation evidencing that the substituted material or equipment meets or exceeds the specifications for materials and/or equipment set forth in the project manual. Such documentation shall include, but no limited to, a full explanation of the proposed substitution, together with a submittal of all supporting data including technical information, catalog cuts, warranties, test results, installation instructions, operating procedures, significant quantities of proposed substitution (e.g. performance, weight, size, durability and visual effects), and other like information necessary for the complete evaluation of the substitution. Additionally, the Contractor shall provide material test reports from a qualified testing agency indicating and interpreting test results for compliance with the requirements indicated. All such data shall be provided to the Architect and Owner at the Contractor's sole expense. The Contractor's written explanation shall also include a list of reasons the substitution is advantageous and necessary, including the benefits to the Owner and the projects in the event that the substitution is acceptable. Additionally, the Contractor shall submit to the Architect information describing in specific detail how the proposed substituted product differs from the quality and performance required by the base specifications, and such other information as may be required by the Owner and the Architect.

4. Coordination information, including a list of changes or modifications needed to other parts of the Work and the construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.

5. Samples, where applicable or requested.

6. Detailed comparison of Contractor's Construction Schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating lack of availability or delays in delivery.

7. Detailed comparison of the difference in cost between the specified product and the proposed substitution including any and all costs associated with changes or modifications needed to other parts of the work and to construction performed by the Owner and/or sperate Contractors that will be necessary to accommodate proposed substitution. In the event the substitution is acceptable, the Contractor proposing the use of the substitution shall bear all costs associated with said changes or modifications.

8. By making said requirements in conformance with procedures established herein and elsewhere in the Project Manual, the Contractor:
   a. Represents that the representative of it has personally investigated the proposed substitute product and has determined that it is equal to or superior in all respects to that specified.
   b. Represents that the warranty for the substitution will be the same, or greater than, that applicable to the specified product.
   c. Certifies that the cost data is complete and includes all related costs under this contract, including professional services necessary and/or required for the architect and engineers to implement said substitutions and waives any and all claims for additional costs related to the substitution which subsequently became apparent.
   d. Represents that it will coordinate the installation of the accepted substitute, making all such changes to the drawings effected by the change, including but not limited to the electrical, plumbing, site work and heating and ventilation specifications as may be required for the work to be complete in all respects.

e. An affidavit stating that (1) the proposed substitution conforms and meets all requirements shown on the Drawings and (2) the Contractor accepts the warranty and correction obligations in connection with this proposed substitution as if originally specified by the Architect; and the proposed substitution will have no effect on the construction schedule.

9. Proposals for substitutions shall be submitted with the Contractor's Bid.

10. No substitutions will be considered or allowed without the Contractor's submittal of complete substantiating data and information as stated hereinbefore.

1.5 ACTION SUBMITTALS

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

1. Substitution Request Form: Use CSI Form 13.1A

2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:

a. Statement indicating why specified product or fabrication, or installation cannot be provided, if applicable.
b. Coordination information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution.
c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
e. Samples, where applicable or requested.
f. Certificates and qualification data, where applicable or requested.
g. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
i. Research reports evidencing compliance with building code in effect for Project, from ICC-ES
j. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
k. Cost information, including a proposal of change, if any, in the Contract Sum.
l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.

m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within 10 days of receipt of a request for substitution. Architect will notify Contractor through Construction Manager of acceptance or rejection of proposed substitution within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.

   a. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.
   b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

1.6 QUALITY ASSURANCE

A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

1.7 PROCEDURES

A. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than **15** days prior to time required for preparation and review of related submittals.

1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:

   a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
   b. Substitution request is fully documented and properly submitted.
   c. Requested substitution will not adversely affect Contractor's construction schedule.
   d. Requested substitution has received necessary approvals of authorities having jurisdiction.
   e. Requested substitution is compatible with other portions of the Work.
   f. Requested substitution has been coordinated with other portions of the Work.
   g. Requested substitution provides specified warranty.

h. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

B. Substitutions for Convenience: Not allowed unless otherwise submitted per Article 6(X) of the General Conditions

PART 3 - EXECUTION (Not Used)

END OF SECTION 012500

SECTION 012600 – CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

B. Refer to Article 8 of the General Conditions concerning Changes in Work.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for handling and processing Contract modifications.

B. Related Requirements:

1. Section 012500 "Substitution Procedures" for administrative procedures for handling requests for substitutions made after the Contract award.

1.3 CHANGES IN THE WORK

A. Without invalidating the agreement between the Owner and the Contractor, and without notice to the Contractor's surety, the Owner may, at any time or from time to time, order additions, deletions, or revisions in the Contractor's work. Such additions, deletions or revisions will be authorized by field order, change order, or construction change directive.

B. Change in work shall follow the requirements of Article 8 of the General Conditions. If there are any procedural discrepancies between the procedures listed below and those of the General Conditions, the General Conditions shall take priority.

1.4 MINOR CHANGES IN THE WORK

A. Architect will issue through Construction Manager supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on AIA Document G710, "Architect's Supplemental Instructions." or form included in Project Manual.

1.5 PROPOSAL REQUESTS

A. Owner-Initiated Proposal Requests: Architect and/or Construction Manager will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.

1. Work Change Proposal Requests issued by Architect and/or Construction Manager are not instructions either to stop work in progress or to execute the proposed change.

2. Within time specified in Proposal Request or 10 days, when not otherwise specified, after receipt of Proposal Request, submit a quotation estimating cost

adjustments to the Contract Sum and the Contract Time necessary to execute the change.

a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
c. Include costs of labor and supervision directly attributable to the change.
d. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
e. Quotation Form: Use forms acceptable to Architect or Construction Manager.

B. Contractor-Initiated Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a proposal by submitting a request for a change to Construction Manager.

1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.

2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.

3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.

4. Include costs of labor and supervision directly attributable to the change.

5. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

6. Comply with requirements in Section 012500 "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.

7. Proposal Request Form: Use form acceptable to Architect or Construction Manager.

1.6 ADMINISTRATIVE CHANGE ORDERS

A. Allowance Adjustment: See Section 012100 "Allowances" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect actual costs of allowances.

B. Unit-Price Adjustment: See Section 012200 "Unit Prices" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect measured scope of unit-price work.

1.7 CHANGE ORDER PROCEDURES

A. On Owner's approval of a Work Changes Proposal Request, Architect will issue a Change Order for signatures of Owner, Contractor, and Construction Manager on AIA Document G701.

1.8 CONSTRUCTION CHANGE DIRECTIVE

A. Construction Change Directive: Architect and/or Construction Manager may issue a Construction Change Directive on AIA Document G714. Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.

1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.

B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.

1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012600

SECTION 013100 – PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. This Section includes administrative procedures for Project Coordination by the Architect and Construction Manager and the responsibilities of all Prime Contractors to contribute and cooperate with the coordination of the construction operations on the Project including, but not limited to, the following:

1. Coordination Drawings.

2. Administrative and supervisory personnel.

3. Project meetings.

B. Each contractor shall participate in coordination requirements. Certain areas of responsibility will be assigned to a specific contractor and all shall be overseen by the Architect and Construction Manager.

C. Related Sections include the following:

1. Division 1 Section "Submittal Procedures" for Administrative and Procedural Requirements for submitting Shop Drawings.

2. Division 1 Section "Close-out Procedures" for coordinating Contract closeout.

1.03 COORDINATION

A. Project Coordination: Architect/Construction Manager shall coordinate construction operations to ensure efficient and orderly installation of each part of the Work. Construction operations included in different Sections that depend on each other for proper installation, connection, and operation shall be coordinated between trades under the supervision of the Architect/Construction Manager.

B. Coordination: 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. 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.

2. Coordinate installation of different components with other contractors to ensure maximum accessibility for required maintenance, service, and repair.

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

4. Where availability of space is limited, coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair of all components, including mechanical and electrical.

C. Architect and Construction Manager shall prepare memoranda for distribution to each party involved, outlining special procedures required for coordination.

D. Administrative Procedures: All Prime Contractors shall work with the Architect and Construction manager to 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. Preparation of Contractor's Construction Schedule.

2. Preparation of the Schedule of Values.

3. Installation and removal of temporary facilities and controls.

4. Delivery and processing of submittals.

5. Progress meetings.

6. Preinstallation conferences.

7. Startup and adjustment of systems.

8. Project closeout activities.

E. Conservation: All Prime Contractors shall work with the Architect and Construction manager to coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.

1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. Refer to other Sections for disposition of salvaged materials that are designated as Owner's property.

1.04 SUBMITTALS

A. Coordination Drawings: Prepare Coordination Drawings if limited space availability necessitates maximum utilization of space for efficient installation of different components or if coordination is required for installation of products and materials fabricated by separate entities.

1. Content: Project-specific information, drawn accurately to scale. Do not base Coordination Drawings on reproductions of the Contract Documents or standard printed data. Include the following information, as applicable:

a. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
b. Indicate required installation sequences.
c. Indicate dimensions shown on the Contract Drawings and make specific note of dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to Architect for resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.

2. Refer to individual Sections for Coordination Drawing requirements for Work in those Sections.

B. Key Personnel Names: Within fourteen (14) days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home and office telephone numbers. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.

1. Post copies of list in Project meeting room, in temporary field office, and by each temporary telephone. Keep list current at all times.

1.05 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

A. General: In addition to Project superintendent, provide other administrative and supervisory personnel as required for proper performance of the Work.

1. Include special personnel required for coordination of operations with other contractors.

1.06 PROJECT MEETINGS

A. General: Architect and Construction Manager shall schedule and conduct meetings and conferences at Project site, unless otherwise indicated.

1. Attendees: Architect and Construction Manager shall inform participants and others involved, and individuals whose presence is required, of date and time of each meeting.

2. Agenda: Architect and Construction Manager shall prepare the meeting agenda. Distribute the agenda to all invited attendees.

3. Minutes: Architect and Construction Manager shall record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned of including Owner and Architect, within three (3) days of the meeting.

B. Preconstruction Conference: Architect and Construction Manager shall schedule a preconstruction conference before starting construction, at a time convenient to Prime Contractors, Owner, Construction Manager and Architect, but no later than seven (7) days after execution of the Agreement. Hold the conference at Project site or another convenient location. Conduct the meeting to review responsibilities and personnel assignments.

1. Attendees: Authorized representatives of Owner, Construction Manager, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.

2. Agenda: Discuss 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. Procedures for processing field decisions and Change Orders.
    f. Procedures for requests for interpretations (RFIs).
    g. Procedures for testing and inspecting.
    h. Procedures for processing Applications for Payment.
    i. Distribution of the Contract Documents.
    j. Submittal procedures.
    k. Use of the premises.
    l. Work restrictions.
    m. Owner's occupancy requirements.
    n. Responsibility for temporary facilities and controls.
    o. Construction waste management and recycling.
    p. Parking availability.
    q. Office, work, and storage areas.
    r. Equipment deliveries and priorities.
    s. First aid.
    t. Security.
    u. Progress cleaning.
    v. Working hours.

3. Minutes: Construction Manager will record and distribute meeting minutes.

C. Preinstallation Conferences: Architect and Construction Manager shall conduct a preinstallation conference at Project site before each construction activity that requires coordination with other construction.

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.

2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:

    a. The Contract Documents.
    b. Options.
    c. Related requests for interpretations (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. Manufacturer's written recommendations.
m. Warranty requirements.
n. Temporary facilities and controls.
o. Space and access limitations.
p. Regulations of authorities having jurisdiction.
q. Testing and inspecting requirements.
r. Installation procedures.
s. Coordination with other work.
t. Required performance results.
u. Protection of adjacent work.
v. Protection of construction and personnel.

3. Architect and Construction Manager shall record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.

4. Reporting: Architect and Construction Manager shall distribute minutes of the meeting to each party present and to parties who should have been present.

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

D. Progress Meetings: Architect and Construction Manager shall conduct progress meetings at biweekly intervals. Coordinate dates of meetings with preparation of payment requests.

1. Attendees: In addition to representatives of Construction Manager, and Architect, each contractor, 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 conference shall be familiar with Project and authorized to conclude matters relating to the Work.

2. 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 Project.

a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to 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 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) Work hours.
10) Hazards and risks.
11) Progress cleaning.
12) Quality and work standards.
13) Status of correction of deficient items.
14) Field observations.
15) Requests for interpretations (RFIs).
16) Status of proposal requests.
17) Pending changes.
18) Status of Change Orders.
19) Pending claims and disputes.
20) Documentation of information for payment requests.

3. Minutes: Architect and Construction Manager will record and distribute to Contractor the meeting minutes.

4. Reporting: Architect and Construction Manager shall distribute minutes of the meeting to each party present and to parties who should have been present.

   a. Schedule Updating: Architect and Construction Manager shall revise Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013100

SECTION 013200 – CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:

1. Contractor's construction schedule.

2. Construction schedule updating reports.

3. Daily construction reports.

4. Site condition reports.

1.2 DEFINITIONS

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

1. Critical Activity: An activity on the critical path that must start and finish on the planned early start and finish times.

2. Predecessor Activity: An activity that precedes another activity in the network.

3. Successor Activity: An activity that follows another activity in the network.

B. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.

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

1.3 INFORMATIONAL SUBMITTALS

A. Format for Submittals: Submit required submittals in the following format:

1. Working electronic copy of schedule file, where indicated.

2. PDF electronic file.

3. [2] paper copies.

B. Startup Network Diagram: Of size required to display entire network for entire construction period. Show logic ties for activities.

C. Contractor's Construction Schedule: Initial 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 (initial or updated) and date on label.

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

1. Activity Report: List of all activities sorted by activity number and then early start date, or actual start date if known.

2. Logic Report: List of preceding and succeeding activities for all activities, sorted in ascending order by activity number and then early start date, or actual start date if known.

3. Total Float Report: List of all activities sorted in ascending order of total float.

4. Earnings Report: Compilation of Contractor's total earnings from the Notice to Proceed until most recent Application for Payment.

E. Construction Schedule Updating Reports: Issue schedule one week before each regularly scheduled progress meeting.

F. Daily Construction Reports: Submit to Construction Manager daily.

G. Site Condition Reports: Submit immediately on discovery of a difference between site conditions and the Contract Documents.

PART 2 - PRODUCTS

2.1 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

A. Time Frame: Extend schedule from date established for the Notice to Proceed to date of Substantial Completion.

1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.

B. Activities: Treat each story or separate area as a separate numbered activity for each main element of the Work. Comply with the following:

1. Activity Duration: Define activities so no activity is longer than 20 days, unless specifically allowed by Architect.

2. Procurement Activities: Include procurement process activities for the following 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 Contractor's construction schedule with submittal schedule.

4. Startup and Testing Time: Include no fewer than 15 days for startup and testing.

5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion and allow time for Architect's administrative procedures necessary for certification of Substantial Completion.

6. Punch List and Final Completion: Include not more than 30 days for completion of punch list items and final completion.

C. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule and show how the sequence of the Work is affected.

1. Phasing: Arrange list of activities on schedule by phase.

2. Work under More Than One Contract: Include a separate activity for each contract.

3. Work by Owner: Include a separate activity for each portion of the Work performed by Owner.

4. Work Restrictions: Show the effect of the following items on the schedule:

a. Coordination with existing construction.
b. Limitations of continued occupancies.
c. Uninterruptible services.
d. Partial occupancy before Substantial Completion.
e. Use of premises restrictions.
f. Provisions for future construction.
g. Seasonal variations.
h. Environmental control.

5. Work Stages: Indicate important stages of construction for each major portion of the Work.

D. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and final completion.

E. 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 Requests for Information.

3. Rejected or unreturned submittals.

4. Notations on returned submittals.

5. Pending modifications affecting the Work and Contract Time.

F. Computer Scheduling Software: Prepare schedules using current version of a program that has been developed specifically to manage construction schedules.

2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE (GANTT CHART)

A. Gantt-Chart Schedule: Submit a comprehensive, fully developed, horizontal, Gantt-chart-type, Contractor's construction schedule within 30 days of date established for the Notice to Proceed.

B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line.

1. For construction activities that require three months or longer to complete, indicate an estimated completion percentage in 10 percent increments within time bar.

2.3 CONTRACTOR'S CONSTRUCTION SCHEDULE (CPM SCHEDULE)

A. General: Prepare network diagrams using AON (activity-on-node) format.

B. Startup Network Diagram: Submit diagram within 14 days of date established for the Notice to Proceed. Outline significant construction activities for the first 30 days of construction. Include skeleton diagram for the remainder of the Work and a cash requirement prediction based on indicated activities.

C. CPM Schedule: Prepare Contractor's construction schedule using a time-scaled CPM network analysis diagram for the Work.

1. Develop network diagram in sufficient time to submit CPM schedule so it can be accepted for use no later than 30 days after date established for the Notice to Proceed.

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

2. Establish procedures for monitoring and updating CPM schedule and for reporting progress. Coordinate procedures with progress meeting and payment request dates.

3. Use "one workday" as the unit of time for individual activities. Indicate nonworking days and holidays incorporated into the schedule in order to coordinate with the Contract Time.

D. CPM Schedule Preparation: Prepare a list of all activities required to complete the Work. Using the startup network diagram, prepare a skeleton network to identify probable critical paths.

1. 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 Contractor's activities.

i. Testing and commissioning.
j. Punch list and final completion.
k. Activities occurring following final completion.

2. Critical Path Activities: Identify critical path activities, including those for interim completion dates. Scheduled start and completion dates shall be consistent with Contract milestone dates.

3. Processing: Process data to produce output data on a computer-drawn, time-scaled network. Revise data, reorganize activity sequences, and reproduce as often as necessary to produce the CPM schedule within the limitations of the Contract Time.

4. Format: Mark the critical path. Locate the critical path near center of network; locate paths with most float near the edges.

   a. Subnetworks on separate sheets are permissible for activities clearly off the critical path.

E. Contract Modifications: For each proposed contract modification 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 project schedule.

F. Initial Issue of Schedule: Prepare initial network diagram from a sorted activity list indicating straight "early start-total float." Identify critical activities. Prepare tabulated reports showing the following:

1. Contractor or subcontractor and the Work or activity.

2. Description of activity.

3. Main events of activity.

4. Immediately preceding and succeeding activities.

5. Early and late start dates.

6. Early and late finish dates.

7. Activity duration in workdays.

8. Total float or slack time.

9. Average size of workforce.

10. Dollar value of activity (coordinated with the schedule of values).

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

1. Identification of activities that have changed.

2. Changes in early and late start dates.

3. Changes in early and late finish dates.

4. Changes in activity durations in workdays.

5. Changes in the critical path.

6. Changes in total float or slack time.

7. Changes in the Contract Time.

2.4 REPORTS

A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:

1. List of subcontractors at Project site.

2. List of separate contractors at Project site.

3. Approximate count of personnel at Project site.

4. Equipment at Project site.

5. Material deliveries.

6. High and low temperatures and general weather conditions, including presence of rain or snow.

7. Accidents.

8. Meetings and significant decisions.

9. Unusual events.

10. Stoppages, delays, shortages, and losses.

11. Meter readings and similar recordings.

12. Emergency procedures.

13. Orders and requests of authorities having jurisdiction.

14. Change Orders received and implemented.

15. Construction Work Change Directives received and implemented.

16. Services connected and disconnected.

17. Equipment or system tests and startups.

18. Partial completions and occupancies.

19. Substantial Completions authorized.

B. Site Condition Reports: Immediately on discovery of a difference between site 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.

PART 3 - EXECUTION

3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

A. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.

1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.

2. Include a report 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 completion percentage for each activity.

B. Distribution: Distribute copies of approved schedule to Architect Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor 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 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 013233 – PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

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

1. Preconstruction photographs.

2. Periodic construction photographs.

B. Related Sections include the following:

1. Division 1 Section "Closeout Procedures" for submitting digital media as Project Record Documents at Project closeout.

1.03 SUBMITTALS

A. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each photograph. Indicate elevation or story of construction. Include same label information as corresponding set of photographs.

B. Construction Photographs: Submit two prints of each photographic view within seven days of taking photographs.

1. Identification: Label each photo with:

a. Date photograph was taken if not date stamped by camera.
b. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
c. Unique sequential identifier.

2. Digital Images: Submit a complete set of digital image electronic files with each submittal of prints as a Project Record Document on a USB flash drive. Identify electronic media with date photographs were taken. Submit images that have same aspect ratio as the sensor, uncropped.

1.04 COORDINATION

A. Auxiliary Services: Cooperate with photographer and provide auxiliary services requested, including access to Project site and use of temporary facilities, including temporary lighting required to produce clear, well-lit photographs without obscuring shadows.

1.05 USAGE RIGHTS

A. Obtain and transfer copyright usage rights from photographer to Owner for unlimited reproduction of photographic documentation.

PART 2 - PRODUCTS

2.01 PHOTOGRAPHIC MEDIA

A. Digital Images: Provide images in uncompressed TIFF format, produced by a digital camera with minimum sensor size of 4.0 megapixels, and at an image resolution of not less than 1024 by 768 pixels.

PART 3 - EXECUTION

3.01 CONSTRUCTION PHOTOGRAPHS

A. General: Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.

1. Maintain key plan with each set of construction photographs that identifies each photographic location.

B. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.

1. Date and Time: Include date and time in filename for each image.

2. Field Office Images: Maintain one set of images on a USB flash drive in the field office at Project site, available at all times for reference. Identify images same as for those submitted to Architect.

C. Preconstruction Photographs: Before commencement of demolition, take color, digital photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by Architect.

1. Take eight photographs to show existing conditions adjacent to property before starting the Work.

2. Take twenty photographs of existing buildings either on or adjoining property to accurately record physical conditions at start of construction.

3. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.

D. Periodic Construction Photographs: Take 12 color, digital photographs weekly, with timing each month adjusted to coincide with the cutoff date associated with each Application for Payment. Select vantage points to show status of construction and progress since last photographs were taken.

E. Architect-Directed Construction Photographs: From time to time, Architect will instruct photographer about number and frequency of color, digital photographs and general

directions on vantage points. Select actual vantage points and take photographs to show the status of construction and progress since last photographs were taken.

F. Final Completion Construction Photographs: Take eight color photographs after date of Substantial Completion for submission as Project Record Documents. Architect will direct photographer for desired vantage points.

1. Do not include date stamp.

END OF SECTION 013233

SECTION 013300 – SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 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. Refer to Section 011200 “Special Provisions” for additional procedures regarding submittals.

C. Related Requirements:

1. Section 012500 "Substitution Procedures" for submitting substitutions.
2. Section 013200 "Construction Progress Documentation" for submitting schedules and reports, including Contractor's construction schedule.
3. Section 014339 "Mockup Requirements" for preparation and submission of mockups.
   Section 017823 "Operation and Maintenance Data" for submitting operation and maintenance manuals.
4. Section 017839 "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.

1.2 DEFINITIONS

A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action.

B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's responsive action. Submittals may be rejected for not complying with requirements.

1.3 ACTION SUBMITTALS

A. Each Prime Contractor shall generate a complete “Submittal Log” within one calendar week of the Notice to Proceed. This log is to list all required submittals specific to your trade as detailed in the Project Manual/Specs. See enclosed form for your use. “ROJ” stands for Required on Job to assist your judgment of the time gap between submission, Architect review, fabrication/procurement and on-site need for putting the work item into place.

1.4 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

A. Architect's Digital Data Files: Electronic copies of digital data files of the Contract Drawings will be provided by Architect for Contractor's use in preparing submittals.

1. Upon request, the Architect will furnish Contractor digital data drawing files of the Contract Drawings for use in preparing Shop Drawings and Project record drawings.

   a. Architect makes no representations as to the accuracy or completeness of digital data drawing files as they relate to the Contract Drawings.

b. Contractor shall execute a data licensing agreement in the form of Architects CAD Release form.

B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
2. 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. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect'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 resubmittals.

1. Initial Review: Allow [**7**] seven days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise 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. Resubmittal Review: Allow [**7**] seven days for review of each resubmittal.

D. Options: Identify options requiring selection by Architect.

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

F. Resubmittals: Make resubmittals in same form as initial submittal.

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 Architect's action stamp.

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

H. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect's action stamp.

PART 2 - PRODUCTS

2.1 ELECTRONIC SUBMITTAL PROCEDURES

A. Summary:

1. Shop drawing and product data submittals shall be transmitted to Architect in electronic (PDF) format. Submissions will be either via email or a data sharing website. The Submit-

tal Exchange website service designed specifically for transmitting submittals between construction team members may also be used for this project (www.submittalexchange.com). If so, the costs for this service will be paid for by the School District and log in credentials will be assigned to the Prime Contractors.
2. The intent of electronic submittals is to expedite the construction process by reducing paperwork, improving information flow, and decreasing turnaround time.
3. The electronic submittal process is not intended for color samples, color charts, or physical material samples.

B. Procedures:

1. Submittal Preparation - Contractor may use any or all of the following options:
   a. Subcontractors and Suppliers provide electronic (PDF) submittals to Contractor via the Submittal Exchange website.
   b. Subcontractors and Suppliers provide paper submittals to General Contractor who electronically scans and converts to PDF format.
   c. Subcontractors and Suppliers provide paper submittals to Scanning Service which electronically scans and converts to PDF format.
2. Contractor shall review and apply electronic stamp certifying that the submittal complies with the requirements of the Contract Documents including verification of manufacturer / product, dimensions and coordination of information with other parts of the work.
3. Architect / Engineer review comments will be made available on the Submittal Exchange website for downloading. Contractor will receive email notice of completed review.
4. Distribution of reviewed submittals to subcontractors and suppliers is the responsibility of the Contractor.
5. Submit paper copies of reviewed submittals at project closeout for record purposes in accordance with Section 017700 – Close-out Procedures

C. Training:

1. At Contractor's option, training is available from Submittal Exchange regarding use of website and PDF submittals. Contact Submittal Exchange at 515-393-2261.
2. Internet Service and Equipment Requirements:
   a. Email address and Internet access at Contractor's main office.
   b. Adobe Acrobat (www.adobe.com), Bluebeam PDF Revu (www.bluebeam.com), or other similar PDF review software for applying electronic stamps and comments.

2.2 GENERAL SUBMITTAL PROCEDURES

A. 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. Manufacturer's catalog cuts.
   b. Manufacturer's product specifications.
   c. Standard color charts.
   d. Statement of compliance with specified referenced standards.
   e. Testing by recognized testing agency.
   f. Application of testing agency labels and seals.
   g. Notation of coordination requirements.
   h. 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 before or concurrent with Samples.
6. Submit Product Data in the following format:

    a. PDF electronic file.

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

    2. Submit Shop Drawings in the following format:

        a. PDF electronic file.

C. 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. Generic description of Sample.
        b. Product name and name of manufacturer.
        c. Sample source.
        d. Number and title of applicable Specification Section.

    3. For projects where electronic submittals are required, provide corresponding electronic submittal of Sample transmittal, digital image file illustrating Sample characteristics, and identification information for record.
    4. 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 Owner's property, are the property of Contractor.

5. 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: Submit [2] two full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.

6. 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 [3] three sets of Samples. Architect will retain [2] two Sample sets; remainder will be returned.

        1) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least [3] three sets of paired units that show approximate limits of variations.

D. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:

    1. Submit product schedule in the following format:

        a. PDF electronic file.

E. Coordination Drawings Submittals: Comply with requirements specified in Section 013100 "Project Management and Coordination."

F. Contractor's Construction Schedule: Comply with requirements specified in Section 013200 "Construction Progress Documentation."

G. Test and Inspection Reports and Schedule of Tests and Inspections Submittals: Comply with requirements specified in Section 014000 "Quality Requirements."

H. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Section 017700 "Close-out Procedures."

I. Maintenance Data: Comply with requirements specified in Section 017823 "Operation and Maintenance Data."

J. 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.

K. 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 AWS forms. Include names of firms and personnel certified.

L. Installer Certificates: 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.

M. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.

N. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.

O. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.

P. 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.

Q. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

R. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project.

S. Schedule of Tests and Inspections: Comply with requirements specified in Section 014000 "Quality Requirements."

T. 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.

U. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.

V. Field Test Reports: Submit written 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.

W. Design Data: Prepare and submit written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

2.3 DELEGATED-DESIGN SERVICES

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

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

B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally signed PDF electronic file and [3] three paper copies of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.

1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

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 Architect.

B. Project Closeout and Maintenance Material Submittals: See requirements in Section 017700 "Close-out Procedures."

C. 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 Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ARCHITECT'S ACTION

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

B. Action Submittals: Architect will review each submittal, make marks to indicate corrections or revisions required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action as follows:

1. “NO EXCEPTIONS TAKEN”: Submission is in full compliance with all contract documents, or indicated deviations are acceptable.
2. “MAKE CORRECTIONS NOTED”: Submission has minor corrections not significant enough to require resubmission; noted corrections must be made in final installation.
3. “REJECTED”: Submission does not meet contract requirements; resubmission of shop drawings, which meet contract requirements, is required.
4. “AMEND AND RESUBMIT”: Resubmission is required due to the nature and/or number and corrections.

C. Informational Submittals: Architect will review each submittal and will not return it or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.

D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.

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

END OF SECTION 013300

SECTION 014000 – QUALITY REQUIREMENTS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

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

B. Contractor is responsible for compliance with the Contract Document requirements.

1. Specific quality-assurance and -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 Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
3. Requirements for Contractor to provide quality-assurance and -control services required by Architect, Owner/Construction Manager, or authorities having jurisdiction are not limited by provisions of this Section.

C. Related Sections include the following:

1. Division 1 Section "Cutting and Patching" for repair and restoration of construction disturbed by testing and inspecting activities.
2. Technical Sections for specific test and inspection requirements.

1.03 DEFINITIONS

A. Quality-Assurance Services: Activities, actions, and procedures performed before and 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. Services do not include contract enforcement activities performed by Architect or Construction Manager.

C. Preconstruction Testing: Tests and inspections that are performed specifically for the Project before products and materials are incorporated into the Work to verify performance or compliance with specified criteria.

D. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with industry standards.

E. Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.

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

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

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

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

I. Experienced: When used with an entity, "experienced" means having successfully completed a minimum of five (5) previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.04 CONFLICTING REQUIREMENTS

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

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

1.05 SUBMITTALS

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

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

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

9. Unique characteristics of each quality-control service.

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

1. Date of issue.
2. Project title and number.
3. Name, address, and telephone number of testing agency.
4. Dates and locations of samples and tests or inspections.
5. Names of individuals making tests and inspections.
6. Description of the Work and test and inspection method.
7. Identification of product and Specification Section.
8. Complete test or inspection data.
9. Test and inspection results and an interpretation of test results.
10. 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.

D. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, 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.

1.06 QUALITY ASSURANCE

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

B. 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.

C. 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.

D. 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.

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

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

1. Requirement for specialists shall not supersede building codes and regulations governing the Work.

G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 548; and with additional qualifications specified in individual Sections; and where required by authorities having jurisdiction, that is acceptable to authorities.

1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.

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. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:

1. Contractor responsibilities include the following:

a. Provide test specimens representative of proposed products and construction.
b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
c. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements.
d. Build site-assembled test assemblies and mockups using installers who will perform same tasks for Project.
e. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.
f. When testing is complete, remove test specimens, assemblies, mockups, and laboratory mockups; do not reuse products on Project.

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

1.07 QUALITY CONTROL

A. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.

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

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

2. Notify testing agencies at least twenty-four (24) hours in advance of time when Work that requires testing or inspecting will be performed.
3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.

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

B. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Division 1 Section "Submittal Procedures."

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

D. Testing Agency Responsibilities: Cooperate with Architect, Construction Manager, and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.

1. Notify Architect 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 certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
5. Do 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 Contractor.

E. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:

1. Access to 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.

F. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -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.

G. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Submit schedule within sixty (60) days of date established for the Notice to Proceed.

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

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.01 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 Architect.
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 Architect’s reference during normal working hours.

3.02 REPAIR AND PROTECTION

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

1. Provide materials and comply with installation requirements specified in other Specification Sections. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible.
2. Comply with the Contract Document requirements for Division 1 Section "Cutting and Patching."

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

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

END OF SECTION 014000

SECTION 014339 – MOCKUP REQUIREMENTS

PART 1 GENERAL

1.01 GENERAL

A. Requirements set forth herein are in addition to and shall be considered as complementary to the General Conditions of the Contract and the balance of Division #1 and specifications.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Requirements set forth herein are in addition to and shall be considered as complementary to the General Conditions of the Contract and the balance of Division #1 and specifications.

B. Specification Sections that Require a Mockup:

1. 040120 – Unit Masonry Restoration

2. 040122 – Stone Restoration

3. 042113 – Brick Masonry

4. 047200 – Cast Stone Masonry

5. 062000 – Finish Carpentry

6. 066116 – Solid Surface Fabrications

7. 093019 – Porcelain Wall Tile

1.03 SUBMITTALS

A. Quality Control Submittals

1. Mockup Plan: Copy of proposed plan.

1.04 DEFINITIONS

A. Mockups (General): 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.

1. Mockups are not Samples.

2. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.

B. Integrated Exterior Mockups: Mockups of the exterior envelope erected separately from the building but on Project site, consisting of multiple products, assemblies, and subassemblies.

C. Room Mockups: Mockups of typical interior spaces complete with wall, floor, and ceiling finishes, doors, windows, millwork, casework, specialties, furnishings and equipment, and lighting.

1.05 QUALITY ASSURANCE

A. Mockup Plan: Detailed, dimensioned plans and elevations showing mockup size, and items and materials that will be included in proposed mockup.

B. Pre-Construction Conference: Prior to the construction of the mockup, a conference will be called by the Director's Representative at the Site for the purpose of reviewing the requirements, and intent of mockup. The conference shall be attended by the Director's Representative, Contractor, and person supervising this phase of the Work

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION

3.01 INSTALLATION

A. Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish as directed.

1. Build mockups in location and of size and profile indicated or, or as directed by the Owner's Representative (Construction Manager and/or Architect).

2. Notify the Owner's Representative a minimum of 5 days in advance of dates and times when mockups will be constructed and able to be inspected.

3. Employ supervisory personnel to oversee mockup construction. Employ same workers that will be employed during the construction of Project.

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

5. Commence the Work after mockup has been inspected and approved in writing by Director's Representative.

6. The mockup will establish the standard of quality of workmanship by which the Work will be judged.

7. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work. Failure to maintain the mockup, until directed, will be cause for rejection of the Work.

8. Demolish and remove mockups when directed unless otherwise indicated.

B. Mockup Types: Construct mockup in accordance with approved shop drawings, project manual, and Contract Drawings, using exact materials and methods approved for the Project, including required accessories.

1. Integrated Exterior Mockups: Coordinate installation of exterior envelope materials and products for which mockups are required in individual Specification Sections and supporting materials.

2. Room Mockups: Construct mockups incorporating required materials and assemblies, finished according to requirements. Provide required lighting and additional lighting where required to enable the Owner's Representative to evaluate quality of the Work.

END OF SECTION 014339

SECTION 014533 – CODE-REQUIRED SPECIAL INSPECTIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Code-required special inspections.

B. Submittals.

1.02 RELATED REQUIREMENTS

A. Section 013300 - Submittal procedures.

B. Section 014000 - Quality Requirements.

C. Section 016000 - Product Requirements: Requirements for material and product quality.

1.03 DEFINITIONS

A. Code or Building Code: ICC (IBC), 2015 Edition of the International Building Code with New York state supplements and specifically, Chapter 17 - Special Inspections and Tests.

B. Authority Having Jurisdiction (AHJ): Agency or individual officially empowered to enforce the building, fire and life safety code requirements of the permitting jurisdiction in which the Project is located.

C. National Institute of Standards and Technology (NIST).

D. Special Inspection:

1. Special inspections are inspections and testing of materials, installation, fabrication, erection or placement of components and connections mandated by the AHJ that also require special expertise to ensure compliance with the approved contract documents and the referenced standards.

2. Special inspections are separate from and independent of tests and inspections conducted by Owner or Contractor for the purposes of quality assurance and contract administration.

1.04 REFERENCE STANDARDS

A. ACI 318 - Building Code Requirements for Structural Concrete and Commentary; 2011.

B. AISC 360 - Specification for Structural Steel Buildings; 2010.

C. ASTM C31/C31M - Standard Practice for Making and Curing Concrete Test Specimens in the Field; 2012.

D. ASTM C172/C172M - Standard Practice for Sampling Freshly Mixed Concrete; 2010.

E. ASTM D3740 - Standard Practice for Minimum Requirements for Agencies Engaged in

the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction; 2012a.

F. ASTM E329 - Standard Specification for Agencies Engaged in Construction Inspection and/or Testing; 2014a.

G. ASTM E605 - Standard Test Methods for Thickness and Density of Sprayed Fire-Resistive Material (SFRM) Applied to Structural Members; 1993 (Reapproved 2011).

H. ASTM E736 - Standard Test Method for Cohesion/Adhesion of Sprayed Fire-Resistive Materials Applied to Structural Members; 2000 (Reapproved 2011).

I. ASTM E2570 - Standard Test Methods for Evaluating Water-Resistive Barrier (WRB) Coatings Used under Exterior Insulation and Finish Systems (EIFS) or EIFS with Drainage; 2007.

J. AWCI 125 - Technical Manual 12-B: Standard Practice for the Testing and Inspection of Field-Applied Thin Film Intumescent Fire-Resistance Materials; 1998.

K. AWS D1.1/D1.1M - Structural Welding Code - Steel; 2015.

L. AWS D1.4/D1.4M - Structural Welding Code - Reinforcing Steel; 2011.

M. ICC (IBC) - International Building Code; 2015.

1.05 SUBMITTALS

A. See Section 013300 - Submittal procedures.

B. Special Inspection Agency Qualifications: Prior to the start of work, the Special Inspection Agency shall:

1. Submit agency name, address, and telephone number, names of full time registered Engineer and responsible officer.

2. Submit copy of report of laboratory facilities inspection made by NIST Construction Materials Reference Laboratory during most recent inspection, with memorandum of remedies of any deficiencies reported by the inspection.

3. Submit certification that Special Inspection Agency is acceptable to AHJ.

C. Smoke Control Testing Agency Qualifications: Prior to the start of work, the Testing Agency shall:

1. Submit agency name, address, and telephone number, and names of full time registered Engineer and responsible officer.

2. Submit documentary evidence that agency has appropriate credentials and documented experience in fire protection engineering, mechanical engineering and HVAC air balancing.

3. Submit certification that Testing Agency is acceptable to AHJ.

D. Special Inspection Reports: After each special inspection, Special Inspector shall promptly submit two copies of report; one to Architect and one to the AHJ.

1. Include:

a. Date issued.
b. Project title and number.
c. Name of Special Inspector.
d. Date and time of special inspection.
e. Identification of product and specifications section.
f. Location in the Project.
g. Type of special inspection.
h. Date of special inspection.
i. Results of special inspection.
j. Conformance with Contract Documents.

1.06 SPECIAL INSPECTION AGENCY

A. Owner will employ services of a Special Inspection Agency to perform inspections and associated testing and sampling in accordance with ASTM E329 and required by the building code.

B. Employment of agency in no way relieves Contractor of obligation to perform work in accordance with requirements of Contract Documents.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.1 SCHEDULE OF SPECIAL INSPECTIONS, GENERAL

A. Frequency of Special Inspections: Special Inspections are indicated as continuous or periodic.

1. Continuous Special Inspection: Special Inspection Agency shall be present in the area where the work is being performed and observe the work at all times the work is in progress.

2. Periodic Special Inspection: Special Inspection Agency shall be present in the area where work is being performed and observe the work part-time or intermittently and at the completion of the work.

B. Special inspections required by Section 1705 may not be required where the work is done on the premises of a fabricator registered and approved to perform such work without special inspection. Approval shall be based upon review of the fabricator's written procedural and quality control manuals and periodic auditing of fabrication practices by an approved special inspection agency. At completion of fabrication, the approved fabricator shall submit a certificate of compliance to the building official stating that the work was performed in accordance with the approved construction documents

3.2 SPECIAL INSPECTIONS FOR STEEL CONSTRUCTION

A. Special inspection for structural steel shall be in accordance with the quality assurance inspection requirements of AISC 360

B. High-Strength Bolting Installation: Verify items listed below comply with AISC 360, Section M2.5.

1. Snug tight joints; periodic.

C. Welding:

1. Structural steel and cold formed steel deck:

a. Complete and Partial Joint Penetration Groove Welds: Verify compliance with AWS D1.1/D1.1M; continuous.
b. Multipass Fillet Welds: Verify compliance with AWS D1.1/D1.1M; continuous.
c. Single Pass Fillet Welds Less than 5/16 inch Wide: Verify compliance with AWS D1.1/D1.1M; periodic.
d. Plug and Slot Welds: Verify compliance with AWS D1.1/D1.1M; continuous.
e. Single Pass Fillet Welds 5/16 inch or Greater: Verify compliance with AWS D1.1/D1.1M; continuous.

2. Reinforcing Steel: Verify items listed below comply with AWS D1.4/D1.4M and ACI 318, Section 3.5.2.

a. Verification of weldability; periodic.
b. Reinforcing steel resisting flexural and axial forces in intermediate and special moment frames as well as boundary elements of special structural walls of concrete and shear reinforcement; continuous.
c. Shear reinforcement; continuous.
d. Other reinforcing steel; periodic.

D. Steel Frame Joint Details: Verify compliance with approved contract documents.

1. Details, bracing and stiffening; periodic.

2. Member locations; periodic.

3. Application of joint details at each connection; periodic.

E. Cold formed steel trusses spanning 60 feet or more; periodic.

3.3 SPECIAL INSPECTIONS FOR CONCRETE CONSTRUCTION

A. Reinforcing Steel, Including Prestressing of Tendons and Placement: Verify compliance with approved contract documents and ACI 318, Sections 3.5 and 7.1 through 7.7; periodic.

B. Reinforcing Steel Welding: Verify compliance with AWS D1.4/D1.4M and ACI 318, Section 3.5.2; periodic.

C. Design Mix: Verify plastic concrete complies with the design mix in approved contract documents and with ACI 318, Chapter 4 and 5.2; periodic.

D. Concrete Sampling Concurrent with Strength Test Sampling: Each time fresh concrete is sampled for strength tests, verify compliance with ASTM C172/C172M, ASTM C31/C31M and ACI 318, Sections 5.6 and 5.8 and record the following, continuous:

1. Slump.

2. Air content.

3. Temperature of concrete.

E. Specified Curing Temperature and Techniques: Verify compliance with approved contract documents and ACI 318, Sections 5.11 through 5.13; periodic.

F. Concrete Strength in Situ: Verify concrete strength complies with approved contract documents and ACI 318, Section 6.2, for the following.

G. Formwork Shape, Location and Dimensions: Verify compliance with approved contract documents and ACI 318, Section 6.1.1; periodic.

3.4 SPECIAL INSPECTIONS FOR SOILS

A. Materials and Placement: Verify each item below complies with approved construction documents and approved geotechnical report.

1. Design bearing capacity of material below shallow foundations; periodic.

2. Design depth of excavations and suitability of material at bottom of excavations; periodic.

3. Materials, densities, lift thicknesses; placement and compaction of backfill: continuous.

4. Subgrade, prior to placement of compacted fill; periodic.

B. Testing: Classify and test excavated and compacted fill material; periodic.

3.5 SPECIAL INSPECTIONS FOR SPRAYED FIRE RESISTANT MATERIALS

A. Sprayed Fire Resistant Materials, General:

1. Verify compliance of sprayed-fire resistant materials with specific fire-rated assemblies shown in the approved contract documents, and with the applicable requirements of the building code.

2. Perform special inspections after rough installation of electrical, mechanical, plumbing, automatic fire sprinkler and suspension systems for ceilings.

B. Physical and visual tests: Verify compliance with fire resistance rating.

1. Condition of substrates; periodic.

2. Thickness of sprayed fire resistant material; periodic.

3. Density of sprayed fire resistant material in pounds per cubic foot; periodic.

4. Bond strength (adhesion and cohesion); periodic.

5. Condition of finished application; periodic.

C. Structural member surface conditions:

1. Inspect structural member surfaces before application of sprayed fire resistant materials; periodic.
2. Verify preparation of structural member surfaces complies with approved contract documents and manufacturer's written instructions; periodic.

D. Application:

1. Ensure minimum ambient temperature before and after application complies with the manufacturer's written instructions; periodic.

2. Verify area where sprayed fire resistant material is applied is ventilated as required by the manufacturer's written instructions during and after application; periodic.

E. Thickness: Verify that no more than 10 percent of thickness measurements taken from sprayed fire resistant material are less than thickness required by fire resistance design in approved contract documents. In no case shall the thickness of the sprayed fire resistant material be less than the minimum below.

1. Minimum Allowable Thickness: Tested according to ASTM E605, periodic.

a. Design thickness 1 inch or greater: Design thickness minus 1/4 inch.
b. Design thickness greater than 1 inch: Design thickness minus 25 percent.

2. Floor, Roof and Wall Assemblies: Test thickness according to ASTM E605 with no less than four measurements per 1,000 square feet of sprayed area on each story of the structure or portion thereof; periodic.

3. Structural Members: Test according to ASTM E605. Test no less than 25 percent of structural members on each story of the structure or portion thereof; periodic.

F. Density: Verify density of sprayed fire resistant material is no less than density required by the fire resistance design in the approved contract documents.

G. Bond Strength: Verify adhesive and cohesive bond strength of sprayed fire resistant materials is no less than 150 pounds per square foot when in-place samples of the cured material are tested according to ASTM E736 and as described below.

3.6 SPECIAL INSPECTIONS FOR INTUMESCENT FIRE RESISTANT COATINGS

A. Verify intumescent fire resistant coatings comply with AWCI 117 and the fire resistance rating shown on the approved contract documents.

3.7 SPECIAL INSPECTIONS FOR EXTERIOR INSULATION AND FINISH SYSTEMS (EIFS)

A. Verify water resistive barrier coating applied over sheathing complies with ASTM E2570.

3.8 SPECIAL INSPECTIONS FOR SMOKE CONTROL

A. Test smoke control systems as follows:

1. Record device locations and test system for leakage after erection of ductwork but before starting construction that conceals or blocks access to system.

2. Test and record pressure difference, flow measurements, detection function and controls after system is complete and before structure is occupied.

3.9 SPECIAL INSPECTION AGENCY DUTIES AND RESPONSIBILITIES

A. Special Inspection Agency shall:

1. Provide qualified personnel at site. Cooperate with Architect and Contractor in performance of services.

2. Perform specified sampling and testing of products in accordance with specified reference standards.

3. Ascertain compliance of materials and products with requirements of Contract Documents.

4. Promptly notify Architect and Contractor of observed irregularities or non-conformance of work or products.

5. Perform additional tests and inspections required by Architect.

6. Submit reports of all tests or inspections specified.

B. Re-testing required because of non-conformance to specified requirements shall be performed by the same agency on instructions by Architect.

C. Re-testing required because of non-conformance to specified requirements shall be paid for by Contractor.

3.10 CONTRACTOR DUTIES AND RESPONSIBILITIES

A. Contractor Responsibilities, General:

1. Deliver to agency at designated location, adequate samples of materials for special inspections that require material verification.

2. Cooperate with agency and laboratory personnel; provide access to the work, to manufacturers' facilities, and to fabricators' facilities.

3. Provide incidental labor and facilities:

a. To provide access to work to be tested or inspected.
b. To obtain and handle samples at the site or at source of Products to be tested or inspected.
c. To facilitate tests or inspections.
d. To provide storage and curing of test samples.

4. Notify Architect and laboratory 24 hours prior to expected time for operations requiring testing or inspection services.

5. Arrange with Owner's agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.

Statement of Special Inspections

Project:

Location:

Owner:

Design Professional in Responsible Charge:

This *Statement of Special Inspections* is submitted as a condition for permit issuance in accordance with the Special Inspection and Structural Testing requirements of the Building Code. It includes a schedule of Special Inspection services applicable to this project as well as the name of the Special Inspection Coordinator and the identity of other approved agencies to be retained for conducting these inspections and tests. This *Statement of Special Inspections* encompass the following disciplines:

☒ Structural ☐ Mechanical/Electrical/Plumbing
☒ Architectural ☐ Other: _____

The Special Inspection Coordinator shall keep records of all inspections and shall furnish inspection reports to the Building Official and the Registered Design Professional in Responsible Charge. Discovered discrepancies shall be brought to the immediate attention of the Contractor for correction. If such discrepancies are not corrected, the discrepancies shall be brought to the attention of the Building Official and the Registered Design Professional in Responsible Charge. The Special Inspection program does not relieve the Contractor of his or her responsibilities.

Interim reports shall be submitted to the Building Official and the Registered Design Professional in Responsible Charge.

A *Final Report of Special Inspections* documenting completion of all required Special Inspections, testing and correction of any discrepancies noted in the inspections shall be submitted prior to issuance of a Certificate of Use and Occupancy.

Job site safety and means and methods of construction are solely the responsibility of the Contractor.

Interim Report Frequency: or ☐ per attached schedule.

Prepared by:

_____
(type or print name)

_____
Signature Date

Design Professional Seal

Owner's Authorization:

_____
Signature Date

Building Official's Acceptance:

_____
Signature Date

Schedule of Inspection and Testing Agencies

This Statement of Special Inspections / Quality Assurance Plan includes the following building systems:

- ☒ Soils and Foundations
- ☒ Cast-in-Place Concrete
- ☒ Precast Concrete
- ☒ Masonry
- ☒ Structural Steel
- ☐ Cold-Formed Steel Framing
- ☒ Spray Fire Resistant Material
- ☐ Wood Construction
- ☐ Exterior Insulation and Finish System
- ☐ Mechanical & Electrical Systems
- ☐ Architectural Systems
- ☐ Special Cases

Special Inspection Agencies	Firm	Address, Telephone, e-mail
1. **Special Inspection Coordinator**		
2. Inspector		
3. Inspector		
4. Testing Agency		
5. Testing Agency		
6. Other		

Note: The inspectors and testing agencies shall be engaged by the Owner or the Owner's Agent, and not by the Contractor or Subcontractor whose work is to be inspected or tested. Any conflict of interest must be disclosed to the Building Official, prior to commencing work.

Soils and Foundations

Item	Agency # (Qualif.)	Scope
1. Shallow Foundations	*PE/GE*	*Inspect soils below footings for adequate bearing capacity and consistency with geotechnical report.* *Inspect removal of unsuitable material and preparation of subgrade prior to placement of controlled fill*
2. Controlled Structural Fill	*PE/GE*	*Perform sieve tests (ASTM D422 & D1140) and modified Proctor tests (ASTM D1557) of each source of fill material.* *Inspect placement, lift thickness and compaction of controlled fill.* *Test density of each lift of fill by nuclear methods (ASTM D2922)* *Verify extent and slope of fill placement.*

Cast-in-Place Concrete

Item	Agency # (Qualif.)	Scope
1. Mix Design	*ACI-CCI ICC-RCSI*	*Review concrete batch tickets and verify compliance with approved mix design. Verify that water added at the site does not exceed that allowed by the mix design.*
2. Material Certification		
3. Reinforcement Installation	*ACI-CCI ICC-RCSI*	*Inspect size, spacing, cover, positioning and grade of reinforcing steel. Verify that reinforcing bars are free of form oil or other deleterious materials. Inspect bar laps and mechanical splices. Verify that bars are adequately tied and supported on chairs or bolsters*
4. Welding of Reinforcing	*AWS-CWI*	*Visually inspect all reinforcing steel welds. Verify weldability of reinforcing steel. Inspect preheating of steel when required.*
5. Anchor Rods		*Inspect size, positioning and embedment of anchor rods. Inspect concrete placement and consolidation around anchors.*
6. Concrete Placement	*ACI-CCI ICC-RCSI*	*Inspect placement of concrete. Verify that concrete conveyance and depositing avoids segregation or contamination. Verify that concrete is properly consolidated.*
7. Sampling and Testing of Concrete	*ACI-CFTT ACI-STT*	*Test concrete compressive strength (ASTM C31 & C39), slump (ASTM C143), air-content (ASTM C231 or C173) and temperature (ASTM C1064).*
8. Curing and Protection	*ACI-CCI ICC-RCSI*	*Inspect curing, cold weather protection and hot weather protection procedures.*

Precast Concrete

Item	Agency # (Qualif.)	Scope
1. Plant Certification / Quality Control Procedures ☐ Fabricator Exempt	*ACI-CCI* *ICC-RCSI*	*Review plant operations and quality control procedures.*
2. Mix Design	*ACI-CCI* *ICC-RCSI*	*Inspect concrete batching operations and verify compliance with approved mix design*
3. Material Certification		
4. Reinforcement Installation	*ACI-CCI* *ICC-RCSI*	*Inspect size, spacing, position and grade of reinforcing steel. Verify that reinforcing bars are free of form oil or other deleterious materials.*
5. Prestress Operations	*ICC-PCSI*	*Inspect placement, stressing, grouting and protection of prestressing tendons*
6. Connections / Embedded Items		
7. Formwork Geometry		
8. Concrete Placement	*ACI-CCI* *ICC-RCSI*	*Inspect placement of concrete. Verify that concrete conveyance and depositing avoids segregation or contamination. Verify that concrete is properly consolidated .*
9. Sampling and Testing of Concrete	*ACI-CFTT* *ACI-STT*	*Test concrete compressive strength (ASTM C31 & C39), slump (ASTM C143), air-content (ASTM C231 or C173) and temperature (ASTM C1064).*
10. Curing and Protection	*ACI-CCI* *ICC-RCSI*	*Inspect curing, cold weather protection and hot weather protection procedures.*
11. Erected Precast Elements	*PE/SE*	*Inspect erection of precast concrete including member configuration, connections, welding and grouting.*

Masonry

Required Inspection Level: ☐ 1 ☐ 2

Item	Agency # (Qualif.)	Scope
1. Material Certification		
2. Mixing of Mortar and Grout	*ICC-SMSI*	*Inspect proportioning, mixing and retempering of mortar and grout.*
3. Installation of Masonry	*ICC-SMSI*	*Inspect size, layout, bonding and placement of masonry units.*
4. Mortar Joints	*ICC-SMSI*	*Inspect construction of mortar joints including tooling and filling of head joints.*
5. Reinforcement Installation	*ICC-SMSI* *AWS-CWI*	*Inspect placement, positioning and lapping of reinforcing steel.* *Inspect welding of reinforcing steel.*
6. Grouting Operations	*ICC-SMSI*	*Inspect placement and consolidation of grout. Inspect masonry clean-outs for high-lift grouting.*
7. Weather Protection	*ICC-SMSI*	*Inspect cold weather protection and hot weather protection procedures. Verify that wall cavities are protected against precipitation.*
8. Evaluation of Masonry Strength	*ICC-SMSI*	*Test compressive strength of mortar and grout cube samples (ASTM C780).* *Test compressive strength of masonry prisms (ASTM C1314).*
9. Anchors and Ties	*ICC-SMSI*	*Inspect size, location, spacing and embedment of dowels, anchors and ties.*
10. Anchors and Ties	*ICC-SMSI*	*Inspect size, location, spacing and embedment of dowels, anchors and ties.*

Structural Steel

Item	Agency # (Qualif.)	Scope
1. Fabricator Certification/ Quality Control Procedures ☐ Fabricator Exempt	*AWS/AISC-SSI ICC-SWSI*	*Review shop fabrication and quality control procedures.*
2. Material Certification	*AWS/AISC-SSI ICC-SWSI*	*Review certified mill test reports and identification markings on wide-flange shapes, high-strength bolts, nuts and welding electrodes*
3. Open Web Steel Joists		*Inspect installation, field welding and bridging of joists.*
4. Bolting	*AWS/AISC-SSI ICC-SWSI*	*Inspect installation and tightening of high-strength bolts. Verify that splines have separated from tension control bolts. Verify proper tightening sequence. Continuous inspection of bolts in slip-critical connections.*
5. Welding	*AWS-CWI* *ASNT*	*Visually inspect all welds. Inspect pre-heat, post-heat and surface preparation between passes. Verify size and length of fillet welds.* *Ultrasonic testing of all full-penetration welds.*
6. Structural Details	*PE/SE*	*Inspect steel frame for compliance with structural drawings, including bracing, member configuration and connection details.*
7. Metal Deck	*AWS-CWI*	*Inspect welding and side-lap fastening of metal roof and floor deck.*

Spray-Applied Fire Resistant Material

Item	Agency # (Qualif.)	Scope
1. Material Specifications		
2. Laboratory Tested Fire Resistance Design	*ICC-SFSI*	*Review UL fire resistive design for each rated beam, column, or assembly.*
3. Schedule of Thickness	*ICC-SFSI*	*Review approved thickness schedule.*
4. Surface Preparation	*ICC-SFSI*	*Inspect surface preparation of steel prior to application of fireproofing*
5. Application	*ICC-SFSI*	*Inspect application of fireproofing.*
6. Curing and Ambient Condition	*ICC-SFSI*	*Verify ambient air temperature and ventilation is suitable for application and curing of fireproofing.*
7. Thickness	*ICC-SFSI*	*Test thickness of fireproofing (ASTM E605). Perform a set of thickness measurements for every 1,000 SF of floor and roof assemblies and on not less than 25% of rated beams and columns.*
8. Density	*ICC-SFSI*	*Test the density of fireproofing material (ASTM E605).*
9. Bond Strength	*ICC-SFSI*	*Test the cohesive/adhesive bond strength of fireproofing ASTM E736). Perform not less than one test for each 10,000 SF.*

END OF SECTION 014533

SECTION 015000 – TEMPORARY FACILITIES AND CONTROLS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

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

B. Related Sections include the following:

1. Division 01 Section "Multiple Contract Summary" for division of responsibilities for temporary facilities and controls.
2. Divisions 02 through 33 Sections for temporary heat, ventilation, and humidity requirements for products in those Sections.

1.3 DEFINITIONS

A. Permanent Enclosure: As determined by Architect, exterior walls are insulated and weathertight; and all openings are closed with permanent construction or substantial temporary closures.

1.4 USE CHARGES

A. Use Owner’s existing utilities at no additional or change in contract sum.

B. Water Service: Contractor shall provide connection to Owner’s existing water system as available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations using backflow preventer. Removal by same.

C. Electric Power Service: Contractor shall provide power from Owner's existing system as available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations. Removal by same.

D. Each Contractor and their Subcontractors shall take measures to conserve water, electric consumption and use of utilities.

1.5 SUBMITTALS

A. Site Plan: Show temporary facilities, utility hookups, and staging areas.

1.6 QUALITY ASSURANCE

A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations 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.

1.7 PROJECT CONDITIONS

A. Temporary Use of Permanent Facilities: Installer of each permanent service shall assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Pavement: Comply with Division 32 Section "Bituminous Concrete Paving."

B. Chain-Link Fencing: Minimum 2-inch (50-mm), 0.148-inch- (3.76-mm-) thick, galvanized steel, chain- link fabric fencing; minimum 8 feet (2.4 m) high with galvanized steel pipe posts; minimum 2-3/8-inch- (60-mm-) OD line posts and 2-7/8-inch- (73-mm-) OD corner and pull posts, with 1-5/8-inch- (42-mm-) OD top rails. Provide dust screen along all fencing.

C. Portable Chain-Link Fencing: Minimum 2-inch (50-mm), 9-gauge, galvanized steel, chain-link fabric fencing; minimum 8 feet (2.4 m) high with galvanized steel pipe posts; minimum 2-3/8-inch- (60-mm-) OD line posts and 2-7/8-inch- (73-mm-) OD corner and pull posts, with 1-5/8-inch- (42-mm-) OD top and bottom rails. Provide galvanized steel bases for supporting posts. Provide dust screen along all fencing.

D. Lumber and Plywood: Comply with requirements in Division 06 Section "Miscellaneous Rough Carpentry."

E. Gypsum Board: Minimum 5/8 inch (12.7 mm) thick by 48 inches (1219 mm) wide by maximum available lengths; fire rated-type panels with tapered edges. Comply with ASTM C 36/C 36M.

F. 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.

G. Paint: Comply with requirements in Division 09 painting Sections.

2.2 TEMPORARY FACILITIES

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

B. 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: Contractor shall provide portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

B. HVAC Equipment: Unless Owner authorizes use of permanent HVAC system, Contractor shall provide temporary heat as may be required. Temporary heat shall be provided to assure that the work of all trades can continue through the winter months. This includes temporary heating equipment, fuel, fire watch, necessary labor/supervision, ventilation, temporary enclosures etc. In no case shall the temperature be less than 50 degrees F. Temporary heating plants using electric power as an energy source can be used with prior authorization by the Architect/CM/Owner/

C. The Contractor shall submit to the owner the equipment to be used for approval prior to the commencement of work.

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 Owner authorizes use of permanent HVAC system for temporary use during construction, provide filter with MERV of 8 at each return air grille in system and remove at end of construction.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

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

1. Locate facilities to limit site disturbance as specified in Division 01 Section "Summary."

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 SHRINK-WRAPPING OF CONSTRUCTION AREAS FOR WINTER CONDITIONS

A. In areas of work that shall be exposed during cold weather, seal the openings with shrink-wrap plastic and provide a sealed, watertight condition. Provide intermediate supports and/or scaffolding if required due to the size of the opening. If temporary door(s) is/are required frame accordingly and then wrap around the door.

3.3 TEMPORARY UTILITY INSTALLATION

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

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

B. Sewers and Drainage: Contractor for General Construction provides temporary utilities to remove effluent lawfully.

C. Water Service: Plumbing Contractor shall use Owner's existing water service facilities, if facilities are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.

1. Where installations below an outlet might be damaged by spillage or leakage, provide a drip pan of suitable size to minimize water damage. Drain accumulated water promptly from pans.

D. Sanitary Facilities: Contractor for General Construction shall provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities. The location of the temporary toilets must be submitted to the owner for approval prior to the commencement of work.

E. HEATING: Contractor for General Construction shall provide temporary heating as required by all Trades, for the execution of construction activities, for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity for both interior construction and exterior construction activities, from October 15th to April 15th which is the traditional heating season. Select equipment that will not have a harmful effect on completed installations or elements being installed.

Building Temporary Heat:
Refer to Multiple Contract Summary 01 10 10 for additional information on providing Building Temporary Heat.

F. Ventilation and Humidity Control: Contractor for General Construction shall 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: Contractor shall use of Owner's existing electric power service, as long as equipment is maintained in a condition acceptable to Owner.

H. Electric Power Service: Contractor shall provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.

1. Connect temporary service to Owner's existing power source, as directed by Owner.

I. Lighting: Contractor shall 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.

3.4 SUPPORT FACILITIES INSTALLATION

A. General: Comply with the following:

1. Provide incombustible construction for offices, shops, and sheds located within construction area or within 30 feet (9 m) of building lines. Comply with NFPA 241.
2. Maintain support facilities until near Substantial Completion. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.

B. Temporary Paved Areas: Construct and maintain temporary paved areas adequate for construction operations. Locate temporary paved areas within construction limits indicated on Drawings.

1. Provide dust-control treatment that is nonpolluting and non-tracking. Reapply treatment as required to minimize dust.

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. Project Identification and Temporary Signs: Provide Project identification and other signs. Install signs where indicated to inform public and individuals seeking entrance to Project. Unauthorized signs are not permitted. Installation and removal by Contractor at no additional cost to Owner.

1. Provide temporary, directional signs for construction personnel and visitors.
2. Maintain and touchup signs so they are legible always.

E. Waste Disposal Facilities: Comply with requirements specified in Division 01 Section "Construction Waste Management and Disposal."

F. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with Division 01 Section "Execution" for progress cleaning requirements.

G. 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.

H. Existing Stair Usage: Use of at least one of Owner's existing stairs will be permitted, if stairs are cleaned and maintained in a condition acceptable to 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, despite such protection, stairs become damaged, restore damaged areas so no evidence remains of correction work.

I. Exiting elevator(s) are not to be used by the contractors for transporting any materials and equipment.

3.5 SECURITY AND PROTECTION FACILITIES INSTALLATION

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

1. Comply with Article 4 of the General Conditions for Contractor’s use of site.
2. Comply with work restrictions specified in Division 01 Section "Summary of Work."

B. 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. Provide Owner and Construction Manager each with one set of keys.

C. Security Enclosure and Lockup: Install substantial temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security.

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

E. Covered Walkways / Sidewalk Sheds: Contractor is to provide walkways and sheds as indicated on the drawings. Structures are to be designed, stamped & signed by an actively licensed, in the State of New York, Architect or Engineer. Submit stamped and signed plans and specifications for record. System is to be erected and maintained by a New York State licensed scaffolding contractor. Electrical Contractor is to provide temporary lighting within the Sheds as per code. No exposed wires shall be accepted, all wires are to be placed within conduits. Lights shall be protected by wire cages.

F. 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 is needed and permanent enclosure is not complete, insulate temporary enclosures.

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

1. Construct dustproof and fire rated partitions with 5/8" type 'x' gypsum wallboard with joints taped on both sides. Paint occupied side of partition.
2. Construct dustproof partitions with 1 layer of 4-mil (0.09-mm) polyethylene sheet on each side. Cover floor with 1 layer of 4-mil (0.09-mm) polyethylene sheet, extending sheets 18 inches (460 mm) up the sidewalls. Overlap and tape full length of joints. Cover floor with fire-retardant plywood.
3. Sound Insulate partitions to provide noise protection to occupied areas.
4. Seal joints and perimeter. Equip partitions with dustproof HM doors and frames with security locks.
5. Protect air-handling equipment, heating equipment, casework and carpeting.
6. Weather strip openings.
7. Provide walk-off mats at each entrance through temporary partition.

H. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241.

1. Prohibit smoking in construction areas.
2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.

I. Temporary Protection of Existing Life Safety & Security Equipment: Install and maintain protection of existing equipment within the Areas of Work (i.e. Smoke Detectors, Strobes, etc.). This includes temporarily supporting the equipment so it remains functional.
1. Smoke detectors need to remain functional – cover daily in areas of work, once work day is over uncover OR disable daily in areas of work, once work day is over re-engage. If adjacent smoke detectors outside of the work area are impacted by disabling than that option will not be allowed.

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, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

C. 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. 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 Contractor. Owner reserves right to take possession of Project identification signs.
2. Remove temporary paving not intended for or acceptable for integration into permanent paving. Replace damaged street paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.
3. At Substantial Completion, clean and renovate permanent facilities used during construction period. Comply with final cleaning requirements specified in Division 01 Section "Closeout Procedures."

D. Site Restoration: Restore all areas disturbed on the site to original condition.
1. Restore grass areas.
2. Replace damaged asphalt paving
3. Replace damaged walkways
4. Replace landscaping that has been damaged.

END OF SECTION 015000

SECTION 017300 – EXECUTION REQUIREMENTS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:

1. Construction layout.
2. Field engineering and surveying.
3. General installation of products.
4. Coordination of Owner-installed products.
5. Progress cleaning.
6. Starting and adjusting.
7. Protection of installed construction.
8. Correction of the Work.

B. Related Sections include the following:

1. Division 1 Section "Project Management and Coordination" for procedures for coordinating field engineering with other construction activities.
2. Division 1 Section "Submittal Procedures" for submitting surveys.
3. Division 1 Section "Cutting and Patching" for procedural requirements for cutting and patching necessary for the installation or performance of other components of the Work.
4. Division 1 Section "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.01 EXAMINATION

A. Existing Conditions: The existence and location of site improvements, utilities, and other construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of mechanical and electrical systems and other construction affecting the Work.

1. Before construction, verify the location and points of connection of utility services.

B. Existing Utilities: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities and other construction affecting the Work.

1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; and underground electrical services.

2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

C. Acceptance of Conditions: Examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

1. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:

a. Description of the Work.
b. List of detrimental conditions, including substrates.
c. List of unacceptable installation tolerances.
d. Recommended corrections.

2. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

3. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.

4. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.

5. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.02 PREPARATION

A. Existing Utility Information: Furnish information to local utility and Owner that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.

B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Architect. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents.

3.03 CONSTRUCTION LAYOUT

A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect and Construction Manager promptly.

B. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.

C. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect and Construction Manager.

3.04 FIELD ENGINEERING

A. Identification: Owner will identify existing benchmarks, control points, and property corners.

B. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.

1. Do not change or relocate existing benchmarks or control points without prior written approval of Architect. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Architect before proceeding.

2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.

C. Benchmarks: Establish and maintain a minimum of two (2) permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.

1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.

2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.

3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.

3.05 INSTALLATION

A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.

1. Make vertical work plumb and make horizontal work level.

2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.

3. Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.

4. Maintain minimum headroom clearance of 8 feet in spaces without a suspended ceiling.

B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.

D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

E. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.

F. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

G. Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.

1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.

2. Allow for building movement, including thermal expansion and contraction.

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

H. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.

I. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.06 PROGRESS CLEANING

A. General: Clean Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.

1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.

2. Do not hold materials more than 7 days during normal weather or 3 days if the temperature is expected to rise above 80 deg F (27 deg C).

3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.

B. Site: Maintain Project site free of waste materials and debris.

C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.

1. Remove liquid spills promptly.

2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

G. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.

H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

J. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.07 STARTING AND ADJUSTING

A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.

B. Adjust operating components for proper operation without binding. Adjust equipment for proper operation.

C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

D. Manufacturer's Field Service: If a factory-authorized service representative is required to inspect field-assembled components and equipment installation, comply with qualification requirements in Division 1 Section "Quality Requirements."

3.08 PROTECTION OF INSTALLED CONSTRUCTION

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

B. Comply with manufacturer's written instructions for temperature and relative humidity.

3.09 CORRECTION OF THE WORK

A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Division 1 Section "Cutting and Patching."

1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.

B. Restore permanent facilities used during construction to their specified condition.

C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.

D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.

E. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION 017300

SECTION 017310 – CUTTING AND PATCHING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

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

B. Related Sections include the following:

1. Divisions 2 through 16 Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.

1.03 DEFINITIONS

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

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

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

1. Water, moisture, or vapor barriers.
2. Membranes and flashings.
3. Equipment supports.

D. 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 Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

PART 2 - PRODUCTS

2.01 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.

PART 3 - EXECUTION

3.01 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.

3.02 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.

3.03 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. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.

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. Concrete/Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
3. Excavating and Backfilling: Comply with requirements in applicable Division 2 Sections where required by cutting and patching operations.
4. 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. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.

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

END OF SECTION 017310

SECTION 017419 – CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.01 SUMMARY

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

1. Disposing of nonhazardous demolition and construction waste.

1.02 DEFINITIONS

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

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

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

D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.

E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.

F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

1.03 SUBMITTALS

A. Waste Reduction Progress Reports: Concurrent with each Application for Payment, submit three (3) copies of report. Include separate reports for demolition and construction waste. Include the following information:

1. Material category.

2. Generation point of waste.

3. Total quantity of waste in tons.

4. Quantity of waste salvaged, both estimated and actual in tons.

5. Quantity of waste recycled, both estimated and actual in tons.

6. Total quantity of waste recovered (salvaged plus recycled) in tons.

7. Total quantity of waste recovered (salvaged plus recycled) as a percentage of total waste.

B. Waste Reduction Calculations: Before request for Substantial Completion, submit three (3) copies of calculated end-of-Project rates for salvage, recycling, and disposal as a percentage of total waste generated by the Work.

C. Records of Donations: Indicate receipt and acceptance of salvageable waste donated to individuals and organizations. Indicate whether organization is tax exempt.

D. Records of Sales: Indicate receipt and acceptance of salvageable waste sold to individuals and organizations. Indicate whether organization is tax exempt.

E. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

F. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

G. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.

1.04 QUALITY ASSURANCE

A. Refrigerant Recovery Technician Qualifications: Certified by EPA-approved certification program.

B. Waste Management Conference: Conduct conference at Project site.

1.05 WASTE MANAGEMENT PLAN

A. General: Develop plan consisting of waste identification and waste reduction work plan.[Include separate sections in plan for demolition and construction waste.] Indicate quantities by weight or volume but use same units of measure throughout waste management plan.

B. Waste Identification: Indicate anticipated types and quantities of demolition and construction waste generated by the Work. Include estimated quantities and assumptions for estimates.

C. Waste Reduction Work Plan: List each type of waste and whether it will be salvaged, recycled, or disposed of in landfill or incinerator. Include points of waste generation, total quantity of each type of waste, quantity for each means of recovery, and handling and transportation procedures.

1. Salvaged Materials for Reuse: For materials that will be salvaged and reused in this Project, describe methods for preparing salvaged materials before incorporation into the Work.

2. Salvaged Materials for Sale: For materials that will be sold to individuals and organizations, include list of their names, addresses, and telephone numbers.

3. Salvaged Materials for Donation: For materials that will be donated to individuals and organizations, include list of their names, addresses, and telephone numbers.

4. Recycled Materials: Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.

5. Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.

6. Handling and Transportation Procedures: Include method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location on Project site where materials separation will be located.

D. Forms: Prepare waste management plan on forms included at end of Part 3.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.01 PLAN IMPLEMENTATION

A. General: Implement waste management plan as approved by Architect and Construction Manager. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.

B. Waste Management Coordinator: Engage a waste management coordinator to be responsible for implementing, monitoring, and reporting status of waste management work plan. Coordinator shall be present at Project site full time for duration of Project.

C. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work occurring at Project site.

1. Distribute waste management plan to everyone concerned within five (5) days of submittal return.

2. Distribute waste management plan to entities when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.

D. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold.

3.02 SALVAGING DEMOLITION WASTE

A. Salvaged Items for Reuse in the Work:

1. Clean salvaged items.

2. Pack or crate items after cleaning. Identify contents of containers.

3. Store items in a secure area until installation.

4. Protect items from damage during transport and storage.

5. Install salvaged items to comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make items functional for use indicated.

B. Salvaged Items for Sale and Donation: Not permitted on Project site.

C. Salvaged Items for Owner's Use:

1. Clean salvaged items.

2. Pack or crate items after cleaning. Identify contents of containers.

3. Store items in a secure area until delivery to Owner.

4. Protect items from damage during transport and storage.

3.03 RECYCLING DEMOLITION AND CONSTRUCTION WASTE, GENERAL

A. General: Recycle paper and beverage containers used by on-site workers.

B. Recycling Incentives: Revenues, savings, rebates, tax credits, and other incentives received for recycling waste materials shall be shared equally by Owner and Contractor.

C. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical.

1. Provide appropriately marked containers or bins for controlling recyclable waste until they are removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.

a. Inspect containers and bins for contamination and remove contaminated materials if found.

2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.

3. Stockpile materials away from construction area. Do not store within drip line of remaining trees.

4. Store components off the ground and protect from the weather.

5. Remove recyclable waste off Owner's property and transport to recycling receiver or processor.

3.04 RECYCLING DEMOLITION WASTE

A. Asphaltic Concrete Paving: Grind asphalt to maximum 1-1/2-inch size.

B. Asphaltic Concrete Paving: Break up and transport paving to asphalt-recycling facility.

C. Concrete: Remove reinforcement and other metals from concrete and sort with other metals.

1. Pulverize concrete to maximum 1-1/2-inch size.

D. Masonry: Remove metal reinforcement, anchors, and ties from masonry and sort with other metals.

1. Pulverize masonry to maximum 3/4-inch size.

2. Clean and stack undamaged, whole masonry units on wood pallets.

E. Wood Materials: Sort and stack members according to size, type, and length. Separate lumber, engineered wood products, panel products, and treated wood materials.

F. Metals: Separate metals by type.

1. Structural Steel: Stack members according to size, type of member, and length.

2. Remove and dispose of bolts, nuts, washers, and other rough hardware.

G. Asphalt Shingle Roofing: Separate organic and glass-fiber asphalt shingles and felts. Remove and dispose of nails, staples, and accessories.

H. Gypsum Board: Stack large clean pieces on wood pallets and store in a dry location. Remove edge trim and sort with other metals. Remove and dispose of fasteners.

I. Acoustical Ceiling Panels and Tile: Stack large clean pieces on wood pallets and store in a dry location.

1. Separate suspension system, trim, and other metals from panels and tile and sort with other metals.

J. Carpet and Pad: Roll large pieces tightly after removing debris, trash, adhesive, and tack strips.

1. Store clean, dry carpet and pad in a closed container or trailer provided by Carpet Reclamation Agency or carpet recycler.

K. Equipment: Drain tanks, piping, and fixtures. Seal openings with caps or plugs. Protect equipment from exposure to weather.

L. Plumbing Fixtures: Separate by type and size.

M. Piping: Reduce piping to straight lengths and store by type and size. Separate supports, hangers, valves, sprinklers, and other components by type and size.

N. Lighting Fixtures: Separate lamps by type and protect from breakage.

O. Electrical Devices: Separate switches, receptacles, switchgear, transformers, meters, panelboards, circuit breakers, and other devices by type.

P. Conduit: Reduce conduit to straight lengths and store by type and size.

3.05 RECYCLING CONSTRUCTION WASTE

A. Packaging:

1. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.

2. Polystyrene Packaging: Separate and bag materials.

3. Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.

4. Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.

B. Site-Clearing Wastes: Chip brush, branches, and trees at landfill facility.

C. Wood Materials:

1. Clean Cut-Offs of Lumber: Grind or chip into small pieces.

2. Clean Sawdust: Bag sawdust that does not contain painted or treated wood.

D. Gypsum Board: Stack large clean pieces on wood pallets and store in a dry location.

1. Clean Gypsum Board: Grind scraps of clean gypsum board using small mobile chipper or hammer mill. Screen out paper after grinding.

3.06 DISPOSAL OF WASTE

A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.

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

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

B. Burning: Do not burn waste materials.

C. Burning: Burning of waste materials is permitted only at designated areas on Owner's property, provided required permits are obtained. Provide full-time monitoring for burning materials until fires are extinguished.

D. Disposal: Transport waste materials and dispose of at designated spoil areas on Owner's property.

E. Disposal: Transport waste materials off Owner's property and legally dispose of them.

END OF SECTION 017419

SECTION 017700 – CLOSE-OUT PROCEDURES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

B. Refer to Article 15 of the General Conditions for additional requirements.

1.02 SUMMARY

A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:

1. Inspection procedures.

2. Warranties.

3. Final cleaning.

B. Related Sections include the following:

1. Division 1 Section "Photographic Documentation" for submitting Final Completion construction photographs and negatives.

2. Divisions 2 through 26 Sections for specific closeout and special cleaning requirements for the Work in those Sections.

1.03 SUBSTANTIAL COMPLETION

A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.

1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.

2. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.

3. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.

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

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

6. Complete final cleaning requirements, including touchup painting.

7. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

2. Results of completed inspection will form the basis of requirements for Final Completion.

1.04 FINAL COMPLETION

A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:

1. Submit a final Application for Payment.

2. Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.

3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.

4. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.

B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.05 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Preparation: Submit three copies of list. 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.
b. Date.

c. Name of Architect.
d. Name of Contractor.
e. Page number.

1.06 WARRANTIES

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

B. Partial Occupancy: Submit properly executed warranties within 15 days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.

C. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.

1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch (215-by-280-mm) paper.

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

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

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

PART 2 - PRODUCTS

2.01 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.

PART 3 - EXECUTION

3.01 FINAL CLEANING

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

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 before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:

    a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
    b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
    c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
    d. Remove tools, construction equipment, machinery, and surplus material from Project site.
    e. Clean exposed 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.
    f. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
    g. Remove labels that are not permanent.
    h. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.

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

C. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

END OF SECTION 017700

SECTION 017823 – OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.01 SUMMARY

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

1. Operation and maintenance documentation directory.
2. Emergency manuals.
3. Operation manuals for systems, subsystems, and equipment.
4. Product maintenance manuals.
5. Systems and equipment maintenance manuals.

1.02 CLOSEOUT SUBMITTALS

A. Per Article 15 of the General Conditions, prior to receipt of final payment from the Owner, the Contractor shall provide to the Architect the close out documentation required by the Contract Documents.

B. Manual Content: Operations and maintenance manual content is specified in individual Specification Sections to be reviewed at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.

1. Architect will comment on whether content of operations and maintenance submittals are acceptable.
2. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.

C. 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 Architect.
    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.
2. Three paper copies. Include a complete operation and maintenance directory. Enclose title pages and directories in clear plastic sleeves. Architect will return two copies.

D. Manual Submittal: Submit each manual in final form prior to requesting inspection for Substantial Completion and at least 15 days before commencing demonstration and training. Architect and Commissioning Authority will return copy with comments.

1. Correct or revise each manual to comply with Architect's and Commissioning Authority's comments. Submit copies of each corrected manual within 15 days of

receipt of Architect's and Commissioning Authority's comments and prior to commencing demonstration and training.

PART 2 - PRODUCTS

2.01 REQUIREMENTS FOR EMERGENCY, OPERATION, AND MAINTENANCE MANUALS

A. Directory: Prepare a single, comprehensive directory of emergency, operation, and maintenance data and materials, listing items and their location to facilitate ready access to desired information.

B. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:

1. Title page.

2. Table of contents.

3. Manual contents.

C. 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 Architect.

8. Name and contact information for Commissioning Authority.

9. Names and contact information for major consultants to the Architect that designed the systems contained in the manuals.

10. Cross-reference to related systems in other operation and maintenance manuals.

D. 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.

E. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.

F. Manuals, Electronic Files: Submit manuals in the form of a multiple file composite electronic PDF file for each manual type required.

1. Electronic Files: Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.

2. File Names and Bookmarks: Enable bookmarking of individual documents based on file names. Name document files to correspond to system, subsystem, and equipment names used in manual directory and table of contents. Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem, and equipment names in a readily navigated file tree. Configure electronic manual to display bookmark panel on opening file.

G. Manuals, Paper Copy: Submit manuals in the form of hard copy, bound and labeled volumes.

1. Binders: Heavy-duty, three-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.

a. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents, and indicate Specification Section number on bottom of spine. Indicate volume number for multiple-volume sets.

2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section of the manual. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.

3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software storage media for computerized electronic equipment.

4. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.

a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

2.02 EMERGENCY MANUALS

A. Content: Organize manual into a separate section for each of the following:

1. Type of emergency.

2. Emergency instructions.

3. Emergency procedures.

B. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:

1. Fire.

2. Flood.

3. Gas leak.

4. Water leak.

5. Power failure.

6. Water outage.

7. System, subsystem, or equipment failure.

8. Chemical release or spill.

C. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.

D. Emergency Procedures: Include the following, as applicable:

1. Instructions on stopping.

2. Shutdown instructions for each type of emergency.

3. Operating instructions for conditions outside normal operating limits.

4. Required sequences for electric or electronic systems.

5. Special operating instructions and procedures.

2.03 OPERATION MANUALS

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

1. System, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents.

2. Performance and design criteria if Contractor is delegated design responsibility.

3. Operating standards.

4. Operating procedures.

5. Operating logs.

6. Wiring diagrams.

7. Control diagrams.

8. Piped system diagrams.

9. Precautions against improper use.

10. 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.

2.04 PRODUCT MAINTENANCE MANUALS

A. Content: Organize manual into a separate section 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 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.

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 Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

2.05 SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS

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 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.

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.

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. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.

H. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

PART 3 - EXECUTION

3.01 MANUAL PREPARATION

A. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.

B. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.

C. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.

D. Manufacturers' Data: Where manuals 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.

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 record Drawings to ensure correct illustration of completed installation.

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

F. Comply with Section 017700 "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

END OF SECTION 017823

SECTION 017839 – PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. Per Article 15 of the General Conditions, prior to receipt of final payment from the Owner, the Contractor shall provide to the Architect the close out documentation required by the Contract Documents.

B. This Section includes administrative and procedural requirements for Project Record Documents, including the following:

1. Record Drawings.

2. Record Specifications.

3. Record Product Data.

C. Related Sections include the following:

1. Division 1 Section "Summary of Multiple Contracts" for coordinating Project Record Documents covering the Work of multiple contracts.

2. Division 1 Section "Closeout Procedures" for general closeout procedures.

3. Division 1 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.

4. Divisions 2 through 26 Sections for specific requirements for Project Record Documents of the Work in those Sections.

1.03 SUBMITTALS

A. Record Drawings: Comply with the following:

1. Number of Copies: Submit one (1) set(s) of marked-up Record Prints.

2. Number of Copies: Submit copies of Record Drawings as follows:

a. Final Submittal: Submit one (1) set(s) of marked-up Record Prints, one (1) set(s) of Record Transparencies, and four (4) copies printed from Record Transparencies. Print each Drawing, whether or not changes and additional information were recorded.

B. Record Specifications: Submit one copy (1) of Project's Specifications, including addenda and contract modifications.

C. Record Product Data: Submit five (5) copies of each Product Data submittal.

1. Where Record Product Data is required as part of operation and maintenance manuals, submit marked-up Product Data as an insert in manual instead of submittal as Record Product Data.

PART 2 - PRODUCTS

2.01 RECORD DRAWINGS

A. Record Prints: Maintain one set of blue- or black-line white prints of the Contract Drawings and Shop Drawings.

1. Preparation: Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.

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

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 or Construction Change Directive.
k. Changes made following Architect's written orders.
l. Details not on the original Contract Drawings.
m. Field records for variable and concealed conditions.
n. Record information on the Work that is shown only schematically.

3. Mark the Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, show cross-reference on the Contract Drawings.

4. Mark record 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.

B. Record Transparencies: Immediately before inspection for Certificate of Substantial Completion, review marked-up Record Prints with Architect. When authorized, prepare a full set of corrected transparencies of the Contract Drawings and Shop Drawings.

1. Incorporate changes and additional information previously marked on Record Prints. Erase, redraw, and add details and notations where applicable.

2. Refer instances of uncertainty to Architect for resolution.

3. Owner will furnish Contractor one set of transparencies of the Contract Drawings for use in recording information.

4. Print the Contract Drawings and Shop Drawings for use as Record Transparencies. Architect will make the Contract Drawings available to Contractor's print shop.

C. Record CAD Drawings: Immediately before inspection for Certificate of Substantial Completion, review marked-up Record Prints with Architect. When authorized, prepare a full set of corrected CAD Drawings of the Contract Drawings, as follows:

1. Format: Same CAD program, version, and operating system as the original Contract Drawings.

2. Format: DWG Version, operating in Microsoft Windows operating system.

3. Incorporate changes and additional information previously marked on Record Prints. Delete, redraw, and add details and notations where applicable.

4. Refer instances of uncertainty to Architect for resolution.

5. Architect will furnish Contractor one set of CAD Drawings of the Contract Drawings for use in recording information.

   a. Architect makes no representations as to the accuracy or completeness of CAD Drawings as they relate to the Contract Drawings.

D. Newly Prepared Record Drawings: Prepare new Drawings instead of preparing Record Drawings where Architect determines that neither the original Contract Drawings nor Shop Drawings are suitable to show actual installation.

1. New Drawings may be required when a Change Order is issued as a result of accepting an alternate, substitution, or other modification.

2. Consult Architect for proper scale and scope of detailing and notations required to record the actual physical installation and its relation to other construction. Integrate newly prepared Record Drawings into Record Drawing sets; comply with procedures for formatting, organizing, copying, binding, and submitting.

E. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.

1. Record Prints: Organize Record Prints and newly prepared Record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.

2. Record Transparencies: Organize into unbound sets matching Record Prints. Place transparencies in durable tube-type drawing containers with end caps.

Mark end cap of each container with identification. If container does not include a complete set, identify Drawings included.

3. Record CAD Drawings: Organize CAD information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each CAD file.

4. Identification: As follows:

   a. Project name.
   b. Date.
   c. Designation "PROJECT RECORD DRAWINGS."
   d. Name of Architect.
   e. Name of Contractor.

2.02 RECORD 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 and Record Drawings where applicable.

2.03 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 Project site and changes in manufacturer's written instructions for installation.

3. Note related Change Orders and Record Drawings where applicable.

2.04 MISCELLANEOUS RECORD SUBMITTALS

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

PART 3 - EXECUTION

3.01 RECORDING AND MAINTENANCE

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

B. Maintenance of Record Documents and Samples: Store Record Documents and Samples in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Architect's and DPMC Representative reference during normal working hours.

END OF SECTION 017839

SECTION 019113 – GENERAL COMMISSIONING REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

B. OPR and BoD documentation prepared by Owner and Architect contains requirements that apply to this Section.

1.2 SUMMARY

A. This Section includes general requirements that apply to implementation of commissioning without regard to systems, subsystems, and equipment being commissioned.

B. Related Sections include the following:

1. Division 23 for specific requirements for commissioning HVAC systems.

1.3 DEFINITIONS

A. BoD: Basis of Design.

B. CxA: Commissioning Authority.

C. OPR: Owner's Project Requirements.

D. Systems, Subsystems, and Equipment: Where these terms are used together or separately, they shall mean "as-built" systems, subsystems, and equipment.

E. TAB: Testing, Adjusting, and Balancing.

1.4 COMMISSIONING TEAM

A. Members Appointed by Contractor(s): Individuals, each having authority to act on behalf of the entity he or she represents, explicitly organized to implement the commissioning process through coordinated actions. The commissioning team shall consist of, but not be limited to, representatives of each Contractor, including Project superintendent and subcontractors, installers, suppliers, and specialists deemed appropriate by the Engineer/Architect/Project Management Firm.

B. Members Appointed by Owner:

1. CxA: The designated person, company, or entity that plans, schedules, and coordinates the commissioning team to implement the commissioning process. In this project, Architect/Engineer/Project Management Firm will oversee the commissioning process.

2. Representatives of the facility user and operation and maintenance personnel.

3. Architect and engineering design professionals.

1.5 OWNER'S RESPONSIBILITIES

A. Assign operation and maintenance personnel and schedule them to participate in commissioning team activities including, but not limited to, the following:

1. Coordination meetings.

2. Training in operation and maintenance of systems, subsystems, and equipment.

3. Testing meetings.

4. Demonstration of operation of systems, subsystems, and equipment.

B. Provide utility services required for the commissioning process.

C. Provide the BoD documents, prepared by Architect and approved by Owner, to each Contractor for use in developing the commissioning plan, systems manual, and operation and maintenance training plan.

1.6 CONTRACTOR'S RESPONSIBILITIES

A. Provide utility services required for the commissioning process.

B. Each Contractor shall assign representatives with expertise and authority to act on behalf of the Contractor and schedule them to participate in and perform commissioning team activities including, but not limited to, the following:

1. Participate in construction-phase coordination meetings.

2. Participate in maintenance orientation and inspection.

3. Participate in operation and maintenance training sessions.

4. Participate in final review at acceptance meeting.

5. Certify that Work is complete and systems are operational according to the Contract Documents, including calibration of instrumentation and controls.

6. Evaluate performance deficiencies identified in test reports and, in collaboration with entity responsible for system and equipment installation, recommend corrective action.

7. Review and approve final commissioning documentation.

C. Subcontractors shall assign representatives with expertise and authority to act on behalf of subcontractors and schedule them to participate in and perform commissioning team activities including, but not limited to, the following:

1. Participate in construction-phase coordination meetings.

2. Participate in maintenance orientation and inspection.

3. Participate in procedures meeting for testing.

4. Participate in final review at acceptance meeting.

5. Provide schedule for operation and maintenance data submittals, equipment startup, and testing to Architect/Engineer/Project Management Firm for incorporation into the commissioning plan. Update schedule on a weekly basis (or as agreed) throughout the construction period.

6. Provide information to the Architect/Engineer/Project Management Firm for developing construction-phase commissioning plan.

7. Participate in training sessions for Owner's operation and maintenance personnel.

8. Gather and submit operation and maintenance data for systems, subsystems, and equipment to the Architect/Engineer/Project Management Firm, as specified in Division 1 Section "Operation and Maintenance Data."

9. Provide technicians who are familiar with the construction and operation of installed systems and who shall develop specific test procedures and participate in testing of installed systems, subsystems, and equipment.

1.7 ARCHITECT/ENGINEER/PROJECT MANAGEMENT FIRM RESPONSIBILITIES

A. Organize and lead the commissioning team.

B. Review and comment on submittals from each Contractor for compliance with the OPR, BoD, Contract Documents, and construction-phase commissioning plan. Review and comment on performance expectations of systems and equipment and interfaces between systems relating to the OPR and BoD.

C. At the beginning of the construction phase, conduct an initial construction-phase coordination meeting for the purpose of reviewing the commissioning activities and establishing tentative schedules for operation and maintenance submittals; operation and maintenance training sessions; TAB Work; and Project completion.

D. Observe and inspect construction and report progress and deficiencies. In addition to compliance with the OPR, BoD, and Contract Documents, inspect systems and equipment installation for adequate accessibility for maintenance and component replacement or repair.

E. Prepare Project-specific test and inspection procedures and checklists.

F. Schedule, direct, witness, and document tests, inspections, and systems startup.

G. Compile test data, inspection reports, and certificates and include them in the systems manual and commissioning report.

H. Certify date of acceptance and startup for each item of equipment for start of warranty periods.

I. Review Project Record Documents for accuracy. Request revisions from Contractor to achieve accuracy. Project Record Documents requirements are specified in Division 1 Section "Project Record Documents."

J. Review and comment on operation and maintenance documentation and systems manual outline for compliance with the OPR, BoD, and Contract Documents. Operation and maintenance documentation requirements are specified in Division 1 Section "Operation and Maintenance Data."

K. Prepare operation and maintenance training program. Operation and maintenance training is specified in Division 23.

1.8 QUALITY ASSURANCE

A. Instructor Qualifications: Factory-authorized service representatives, experienced in training, operation, and maintenance procedures for installed systems, subsystems, and equipment.

B. Test Equipment Calibration: Comply with test equipment manufacturer's calibration procedures and intervals. Recalibrate test instruments immediately whenever instruments have been repaired following damage or dropping. Affix calibration tags to test instruments. Instruments shall have been calibrated within six months prior to use.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 OPERATION AND MAINTENANCE TRAINING REQUIREMENTS

A. Training Preparation Conference: Before operation and maintenance training, Architect/Engineer/Project Management Firm shall convene a training preparation conference to include Owner's operation and maintenance personnel, Contractor, and subcontractors. In addition to requirements specified in Division 23 perform the following:

1. Review the BoD.

2. Review installed systems, subsystems, and equipment.

3. Review instructor qualifications.

4. Review instructional methods and procedures.

5. Review training module outlines and contents.

6. Review course materials (including operation and maintenance manuals).

7. Inspect and discuss locations and other facilities required for instruction.

8. Review and finalize training schedule and verify availability of educational materials, instructors, audiovisual equipment, and facilities needed to avoid delays.

9. For instruction that must occur outside, review weather and forecasted weather conditions and procedures to follow if conditions are unfavorable.

B. Training Modules: Develop an instruction program that includes individual training modules for each system, subsystem, and equipment as specified in Division 23.

END OF SECTION 019113