SECTION 011100
SUMMARY

PART 1 GENERAL

1.01 DESCRIPTION OF WORK

A. The Construction of the following: New Fire Station

B. Location: Oscawana Lake Road

Putnam Valley, NY 10579

C. Owner: Putnam Valley Volunteer Fire Department

1.02 OWNER/CONTRACTOR AGREEMENT

A. Produce the Work pursuant to a stipulated sum Agreement.

1.03 OWNER FURNISHED PRODUCTS (may be shown in the Drawings or in the Specifications)

A. Owner's responsibilities
1. Negotiate selection, purchase, and delivery with Vendor.
2. Transmit all pertinent information to Contractor via Architect.
3. Pay for all costs, taxes, and delivery to the Work site.
4. Coordinate delivery times with Contractor.
5. Jointly inspect received products with Contractor.
6. With Contractor's assistance, file shipping and damage claims.
7. Obtain shop drawings.
8. Obtain Special Warranties.
9. Coordinate special training for operation and maintenance.

B. Contractor's responsibilities
1. Review Owner reviewed shop drawings, product data, and samples. Process in same manner as required for products purchased by Contractor.
2. Coordinate delivery times with Owner. Show all Owner furnished products on Progress Schedule.
3. Receive and unload products at site; inspect for completeness or damage jointly with Owner
4. Upon delivery to the Work site, inspect, handle, store, and protect in same manner as required for products purchased by Contractor.
5. Assist Owner with filing shipping and damage claims.
6. Process shop drawings in same manner as required for products purchased by Contractor.
7. Assemble, install, finish, connect, align, adjust, test and clean in same manner as required for products purchased by Contractor.
8. Repair or replace items damaged by construction activities.

1.04 CONTRACTOR’S USE OF PREMISES

A. General: The Contractor shall limit its use of the premises to the Work indicated.

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

C. Driveways and Entrances: Keep the driveway and entrance 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.

1.05 OCCUPANCY REQUIREMENTS

A. Partial Owner Occupancy: Cooperate fully with the Owner or their representative during construction operations to minimize conflicts and to facilitate Owner usage. Perform the work so as not to interfere with the Owner' s operations. 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 the Work. Such placing of equipment and partial occupancy shall not constitute acceptance of the total Work.
   1. Prior to partial Owner occupancy, mechanical and electrical systems shall be fully operational. Required inspections and tests shall have been successfully completed. Upon occupancy, the Owner will operate and maintain mechanical and electrical systems serving occupied portions of the building.
   2. Upon occupancy, the Owner will assume responsibility for maintenance and custodial service for occupied portions of the building.

B. Contractor Accountability
   1. Accountability: Contractor shall be responsible for completion of its portions of the Work in a timely fashion to allow use of the completed facilities as specified in this Section, Paragraph 1.06, Project Milestone Schedule, unless otherwise specifically allowed. Costs incurred by the owner resulting from failure of the contractor to meet the obligations of timely completion of the Work as stated above, will be the responsibility of the contractor. These costs may include but are not limited to:
      a. Loss of use of building space by the Owner.
      b. Overtime labor costs of all contractors working outside normal working hours.
      c. Providing temporary heat for building.
      d. Other related costs.

C. Construction Storage
   1. All construction materials shall be stored in a safe and secure manner, including the use of fences around construction supplies or debris on the Owner's property. Fencing shall be maintained in proper placement at all times.
   2. All construction materials stored on site shall be maintained at published temperatures compliant with all manufacturer's minimum and maximum guidelines to assure product quality.

1.06 PROJECT MILESTONE SCHEDULE

A. The Contractor is required to submit a CPM schedule based on the required contract completion date for review and comment **no later than two (2) weeks after a Notice of Award** for the work is issued. The schedules shall show in detail all work, including procurement, which will be done in the first thirty (30) days and the remaining work under broad categories identifying major milestones including, but not limited to, completion of the project, punch list and turn over.

B. The schedule is to be prepared according to the requirements of Section 013216.

C. The Contractor will schedule all trades.

D. Each Subcontractor is to coordinate their work with each other so that the work and schedule is not impeded. The Contractor shall modify schedules to master CPM schedule from commencement of work to completion of work.

E. It is the specific responsibility of each subcontractor to respond in a timely manner to perform work needed in order for other Subcontractors to maintain their schedules. Failure to do so will be reflected in the division of delay damages. The schedule prepared by the Contractor with input from all of their subcontractors shall be the governing schedule.

1.07 LOCAL REGULATIONS

A. Contractor shall adhere to all Town of Putnam Valley and the County of Putnam Ordinances with regard to construction, noise, health and safety, etc.

B. **As a result of the COVID-19 Pandemic, the Contractor is solely responsible to enforce that ALL on-site workers, visitors, delivery personnel, inspectors, Fire Department Members, etc. comply, as a minimum, with OSHA and NY State COVID-19 safety requirements and guidelines, including mask wearing and social distancing. On-site workers or visitors that refuse to comply with the direction of the Contractor to meet these minimum NY State Safety Requirements will be removed from the project site by the Contractor. A log shall be maintained by the Contractor for all such instances. The Architect shall be apprised of all such instances within 24 hours of occurance via written correspondence with a copy to the Owner's Representative. Hand sanitizing products shall be located in the project trailer and in all on-site portable toilets. As construction of the new fire station progresses, a MINIMUM of one (1) sanitizing station per floor of the project building shall be equipped with a portable table stocked with spray and liquid hand sanitizer, sanitizing wipes. paper towels and garbage receptacle.**

1.08 MISCELLANEOUS OBLIGATIONS

A. Mobilize and commence work within two (2) weeks of Notice to Proceed.

B. Perform all work necessary for snow removal and winter access to the project and trailer, removal of snow and ice, etc. from the building and protection of interior work until the building is weathertight.

C. Provide block heaters, tenting and other means as deemed necessary to provide continued concrete and masonry work through the winter months as recommended and permitted by the ACI 306 for Cold Weather Concreting and ACI 530.1 Section 1.8 Project Conditions.

D. Promptly complete all backfilling operations when all foundations are completed and insulated.

E. Provide access ramps into the " building footprint" over the foundations in locations as needed, at least eight feet wide, for buggies, wheel borrows, man lifts, hi-lows, etc., before the building foundations are backfilled.

F. Contractor is responsible for the COMPLETE performance of the work, including but not limited to all means, methods, equipment, tools, scaffolding, rigging, hoisting, shoring, bracing, etc., necessary to carry out the work in its entirety.

G. Maintain within the field office a complete and current set of Contract Documents (including any Addenda, Change Orders, and Modifications thereto), approved shop drawings, samples, color schedules and other data pertinent to the Project.

H. The Contractor must, at all times, employ the necessary labor force and equipment to perform the work in keeping with the construction schedule and project milestone objectives, and must coordinate with the Clerk of the Works or Owner's Representative (OR) daily. Not only should the number of workers to be considered, but multiple shifts, overtime and weekend work may be necessary to meet the deadlines indicated in the schedule at no additional cost to the Owner. The Contractor shall bear the cost to make up the lost time for his own work. All workers must have sufficient skill and experience to properly perform the work.

I. The Contractor must provide a competent English speaking project manager and full time superintendent who will represent the Contractor in the performance of all work under this contract. The Superintendent is to be fully authorized to represent the Contractor as their agent in all matters regarding the completion of the Work, at all times. All instructions and/or information given to this representative, either verbal or written will be binding as if given to the Contractor. All important communication must be in writing. This representative must be capable of reading and thoroughly understanding all the contract documents issued to complete the Work. **The superintendent shall be the same person throughout the lifetime of the project except as permitted under other portions of the Contract.**

J. The Contractor is fully responsible for the layout of its work in keeping with the contract documents.

K. The Contractor is fully responsible for overall project coordination related to all documents and across all Trades. During coordination phases of the contract, the Contractor must advise the OR, Architect and Subcontractors of any potential conflicts before starting any related fabrication or installation. ANY conflicts not brought to the Architect's attention before the work begins shall be corrected at the sole expense of the Contractor.

L. Contractor is responsible for all costs related to out-of-sequence, and/or phased work. No additional compensation will be considered for returning or remobilization.

M. The Contractor is responsible for all survey work required to achieve correct line and grade.

N. Contractor must employ a NYS licensed surveyor to perform building layout and to **provide certification of location of completed foundation and anchors**. Provide via the required Submittals process a certified anchor bolt survey upon completion of all foundation work and **prior to the start of steel erection**. Upon completion of all sub-slab plumbing line installations, perform an as-built survey and provide a certified drawing locating all sub-slab lines including their relationships to all interior and exterior walls. Failure to provide these as-built drawings in a timely fashion may result in corrective work as directed by the Architect at no additional cost to the Owner.

O. Advise the Architect immediately if conditions are uncovered that are not as identified in the Geotechnical report before continuing with work in the affected area.

P. Contractor is responsible for all debris caused by their work. A weekly clean-up and disposal is required by (sub)contractor(s) performing work on site and on a day selected by the Contractor. Contractor's inability to provide personnel for required clean-up will be charged for labor provided by the Owner, plus 15%, via a deduct contract modification.

Q. Contractors is responsible for cutting required to complete their work. **Cut holes are to be no more than 1/2" larger than object meant to pass through it**. The Contractor is responsible for installing affected finishes and shall perform all repair of finish work. All exposed finishes

must be ready to receive paint, etc.; all concealed openings (piping, ductwork, conduit, etc.) must be repaired to comply with specified wall or deck conditions. Contractor is responsible for fire stopping and code compliance associated work through fire-rated assemblies as detailed on the Drawings or referenced in the Project Manual.

R. Regardless of what is shown on the Mechanical, Electrical and Plumbing drawings, the **Architectural Drawings take precedence** in regard to intent and layout. In regard to Architectural layouts, Contractor and subcontractors involved in the layout of all partition work (whether masonry or drywall & metal studs) must coordinate the sequencing of the layout work with all parties affected by this work.

S. Before walls and partitions are constructed, areas are to be laid out by the Contractor by snapping lines on the concrete slab using whatever instruments are necessary to accurately complete these layouts square and plumb and within the specified tolerances specified. All Partition Types and Finish Schedules must be carefully reviewed in order to properly coordinate wall thicknesses, walls that meet that are composed of different materials, and finishes that are applied to the walls. Once an area is laid out, the OR will be notified by the Contractor. The OR will then make arrangements with the Architect to review the layout on site. Generally, the Architect will be making site visits two (2) times a month. Enough of the layout should be completed so as to make the most of the Architect' s time and expedite the completion of the partition work by the Contractor.

T. There are many items that require detailed coordination among the building components, including the determination that systems and equipment designated to be placed in partitions will fit. Careful attention to these details must be taken at all times. If there is any doubt whatsoever, the OR must be notified immediately in writing. The OR will immediately obtain direction from the Architect to resolve and clarify the issues. Such issues shall be identified in a timely manner by the GC so as to not require an expedited response from either the OR or the Architect. Specifically, no issues shall be identified during actual installation process requiring either immediate Architect response or a delay in work.

U. Coordination meetings with ALL parties must be held as necessary and as determined by the Architect. All relevant sub-Contractors must have proper and sufficient representation at the meetings to cover all issues. The Contractor must attend these as well to assist in the overall coordination of the project as it affects the base building construction.

V. In the event of a conflict between sub-trades or systems, the Architect shall be consulted and its decision shall be final.

W. No work is to be closed-in until the work of other trades is completed and inspected.

X. Determine that all floor drains and cleanouts are in the proper location and at the proper elevation prior to pouring the slabs. **All concrete slabs illustrated on the Architectural Drawings to be sloped to the in-room drain(s) shall be formed and poured as required to achieve such slope.NO post-pour grinding of concrete slabs will be permitted as a alternative solution for the slab slope design intent.**

Y. Obtain Architect approval **prior to the installation for all required sprinkler piping drain lines which will penetrate the exterior wall**. Contractor must coordinate these pipe runs with related room FF&E to assure no conflicts exist. Failure to do so may result in correction action as directed by the Architect at no additional cost to the Owner.

Z. The Contractor is expected to produce coordinated installation drawings of MEP and sprinkler work. As each trade adds its work to the drawing, the GC & subcontractors are to meet together, with the OR, to review and resolve all identified conflicts on the coordination drawings.

The process will follow in the order indicated below.

Sub	Color Designation	Completed by Contractor within
HVAC	Orange Pen	2 weeks from receipt
Plumbing	Blue Pen	1 week from receipt
Sprinkler	Red Pen	1 week from receipt
Electrical	Green Pen	1 week from receipt

Once all Subcontractors have completed their coordination and have initialed the drawings, the coordinated drawings will be submitted to the Architect and Engineer for approval **before any installations begin. It is up to the Contractor to coordinate this work in a timely manner. Any delays in installation due to late delivery of the overall coordination drawings to the Architect for review and approval will be the sole responsibility of the Contractor.**

AA. The Electrical & Mechanical Room layouts are schematic. Contractor is responsible for coordinating the layout of **all** equipment within these spaces based on product cutsheets from accepted Submittals with maintenance and operations in mind. Leave whatever space is necessary for access doors, servicing equipment, etc. and bring any conflicts that exist to the Architect's attention. **A pre-installation layout sketch shall be provided to the Architect & Engineer for review and acceptance prior to the ordering of any equipment within the building.** Failure to pre-coordinate said equipment in any particular space by the Contractor may result in corrective work as directed by the Architect at no additional cost to the Owner.

BB. Local custom and trade union jurisdictional settlements do not control the Scope of Work included in any Contract. When a potential jurisdictional dispute or similar interruption of work is first identified or threatened, the Contractor shall promptly negotiate a reasonable settlement to avoid or minimize the pending interruption and delays.

CC. It is the specific responsibility of the Contractor to provide for the safety of its personnel and the public AT ALL TIMES. If the Contractor observes, or is observed performing its work in an unsafe manner, the Contractor must stop the Work in question immediately and take the necessary corrective actions before it proceeds.

DD. All OSHA safety and hazardous materials regulations will be enforced by the Contractor.

EE. **The Contractor will secure and pay for all permits and fees specific to this Work with the exception of the General Building Permit which will be filed and paid for by the Owner.**

FF. All materials to be removed from site will be stock piled in areas coordinated with the Owner, and will be removed within 48 hours of the direction of the Owner.

GG. Daily clean-up of all roadway entrances.

HH. The Site MUST be kept in a clean and orderly fashion at all times. Materials that are not intended for use in the Work cannot remain on the site for more than 1 week.

II. Special attention is to be directed towards the protection of the trees that are to remain.

JJ. The Contractor must have a person to accept deliveries whenever they arrive.

KK. The use of either electric resistance heating or electric arc welding is prohibited, except if energized by Contractor' s own generator. Temporary heating devices may have electrically powered fans.

LL. Except for items put into use with the Owner's permission, warrantees start no sooner than the time of substantial completion regardless of whether the facilities and/or equipment were used prior to substantial completion.

1.09 WORK SEQUENCE

A. Exterior work hours shall be between the hours of 7 AM and 5 PM daily, Monday through Friday. Activity and access shall be confined to the designated staging area. Activity in the staging area shall be conducted in a manner that causes minimal disruption. Any work that requires disruption to the Owner' s occupants or activities shall be coordinated with and approved by the Owner prior to execution.

B. All work that can be heard from outside the Building must not be performed between the hours of 5:00 pm to 7:00 am or on Sunday.

C. The Contractor must obtain and post a list of all Local Municipal days considered as Holidays. Contractor must observe all rules and regulations of the local municipality with regard to these posted Holidays as it pertains to work permitted, work not permitted, noise, etc.

1.10 DRAWINGS AND SPECIFICATIONS

A. Drawings and Specifications are cooperative and supplementary. Portions of the Work that can best be illustrated by the Drawings might not be included in the Specifications and portions best described by Specifications might not be depicted on Drawings. All items necessary to complete the Work shall be furnished whether written or illustrated.

B. In case of disagreement between Drawings and Specifications, or within either document itself, the better quality or greater quantity of Work and the greatest quantity of materials, wherever shown will be deemed to have been included in the Contract and the Contractor will be required to Provide accordingly. The Specifications generally overrule the Contract Drawings. The larger scale details generally overrule the smaller scale details.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

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SECTION 012000
PRICE AND PAYMENT PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Procedures for preparation and submittal of applications for progress payments.

B. Documentation of changes in Contract Sum and Contract Time.

C. Percentage allowances for Contractor's overhead and profit for changes in the Work

D. Correlation of Contractor submittals based on changes

E. Certified payroll reports.

F. Procedures for preparation and submittal of application for final payment.

1.02 RELATED REQUIREMENTS

A. Section 005000 - Contracting Forms and Supplements: Forms to be used.

B. Section 005200 - Agreement Form: Contract Sum, retainages, payment period, monetary values of unit prices.

C. Section 007200 - General Conditionsand Document 007300 - Supplementary Conditions: Additional requirements for progress payments, final payment, changes in the Work.

D. Section 012100 - Allowances: Payment procedures relating to allowances.

E. Section 012200: Monetary values of unit prices,Payment and modification procedures relating to unit prices.

F. Section 017000 - Execution and Closeout Requirements: Closeout procedures required prior to final payment.

1.03 SCHEDULE OF VALUES

A. Use Schedule of Values Form: AIA G702-1992 and AIA G703-1992.

B. Forms filled out by hand will not be accepted.

C. Submit Schedule of Values via Submittal Exchange within 15 days after date of Owner-Contractor Agreement.

D. Format: Utilize the Table of Contents of this Project Manual. Identify each line item with number and title of the specification section. Identify site mobilization.

E. Include separate line items for Materials and Labor within all breakouts.

F. Include separate line items for the amount of each Allowance specified in Section 012100.

G. **Include a Project Closeout line item equal to the sum of three percent (3%) of the total contract, exclusive of retainage. Refer to 017000 - Execution and Closeout Requirements**.

H. Include within each line item, a direct proportional amount of Contractor's overhead and profit

I. Revise schedule to list approved Change Orders, with each Application For Payment.

J. When Architect requires substantiating information, submit data justifying dollar amounts in question.

1.04 APPLICATIONS FOR PROGRESS PAYMENTS

A. Payment Period: Submit at intervals stipulated in the Agreement.

B. Use Form AIA G702-1992 and Form AIA G703-1992, as stipulated in the Agreement.

C. Forms filled out by hand will not be accepted.

D. For each item, provide a column for listing each of the following:
1. Item Number.
2. Description of work.
3. Scheduled Values.
4. Previous Applications.
5. Work in Place and Stored Materials under this Application.
6. Authorized Change Orders.
7. Total Completed and Stored to Date of Application.
8. Percentage of Completion.
9. Balance to Finish.
10. Retainage.

E. Execute certification by signature of authorized officer.

F. Use data from approved Schedule of Values. Provide dollar value in each column for each line item for portion of work performed and for stored products.

G. List each authorized Change Order as a separate line item, listing Change Order number and dollar amount as for an original item of work.

H. Submit three **original** copies of each Application for Payment.

I. Include the following with the application:
1. Transmittal letter as specified for submittals in Section 013000.
2. Construction progress schedule, revised and current as specified in Section 013000.
   a. Amounts requested shall be consistent with the progress and finish dates shown on the schedule.
3. Current construction photographs specified in Section 013000.
4. Partial Release of Liens for all Subcontractors, suppliers, and vendors.
5. Certified Payroll Reports, in compliance with two (2) certified and notarized copies.
6. Affidavits attesting to off-site stored products, **including certificates from insurance company underwriting coverage of stored products**, copies of invoices and packing slips proving purchase, and actual location of stored materials.
7. Schedule of submittals, revised and current.
8. Updated testing schedule and all current results for tests completed since previous application.

J. When Architect requires substantiating information, submit data justifying dollar amounts in question. Provide one copy of data with cover letter for each copy of submittal. Show application number and date, and line item by number and description.

1.05 MODIFICATION PROCEDURES

A. Submit name of the individual authorized to receive change documents and who will be responsible for informing others in Contractor's employ or subcontractors of changes to the Contract Documents.

B. For minor changes not involving an adjustment to the Contract Sum or Contract Time, Architect will issue an Architect's Supplemental Instructions document directly to Contractor.

C. For other required changes, Architect will issue a Construction Change Directive document, which may be signed by Owner, instructing Contractor to proceed with the change, for subsequent inclusion in a Change Order.
   1. The document will describe the required changes and will designate method of determining any change in Contract Sum or Contract Time.
   2. Promptly execute the change.

D. For changes for which advance pricing is desired, Architect will issue a Work Changes Proposal Request document that includes a detailed description of a proposed change with supplementary or revised drawings and specifications, a change in Contract Time for executing the change with a stipulation of any overtime work required and the period of time during which the requested price will be considered valid. **Contractor shall prepare and submit a fixed price quotation within five (5) days.**

E. Contractor may propose a change by submitting a request for change to Architect, describing the proposed change and its full effect on the work, with a statement describing the reason for the change, and the effect on the Contract Sum and Contract Time with full documentation. Document any requested substitutions in accordance with Section 016000.

F. Computation of Change in Contract Amount: As specified in the Agreement and Conditions of the Contract.
   1. For change requested by Architect for work falling under a fixed price contract, the amount will be based on Contractor's price quotation.
   2. For change requested by Contractor, the amount will be based on the Contractor's request for a Change Order as approved by Architect.
   3. For pre-determined unit prices and quantities, the amount will based on the fixed unit prices.
   4. For unit costs or quantities of units of Work which are not predetermined, execute the Work under a Construction Change Directive.
   5. For change ordered by Architect without a quotation from Contractor, the amount will be determined by Architect based on the Contractor's substantiation of costs as specified for Time and Material work.

G. Substantiation of Costs: Provide full information required for evaluation.
   1. Provide the following data:
      a. Quantities of products, labor, and equipment.
      b. Taxes, insurance, and bonds.
      c. Overhead and profit.
         1) For any change in the Work resulting in a net addition to or deduction from the contract amount (**NOT** being directly funded from the Allowance portion of the contract), calculate overhead and profit in accordance with the percentages set below. See Section 012100 for guidelines set forth for Overhead and Profit as pertaining to funding from the Project Allowance.
         2) Contractor agrees that, unless otherwise approved by Owner prior to the issuing of any particular subcontract, overhead and profit percentages for

Subcontractors and Sub-subcontractors performing any change to their Work shall not be greater than the percentages set forth below.

3) Applicable Contractor overhead and profit percentages:
   a) Overhead adjustment: Ten percent (10%) of Contractor's own straight time labor cost.
   b) Profit adjustment: Five percent (5%) of Contractor's own straight time labor cost plus the amount of the overhead adjustment for that labor cost calculated in accordance with the previous subparagraph.
   c) Combined overhead and profit adjustment: Ten percent (10%) of Contractor's own purchased material cost.
   d) Combined overhead and profit adjustment for Subcontractor Work: Five percent (5%) of the Subcontractor Work.
   e) Contractor shall not receive overhead or profit on the premium portion of Contractor overtime.

4) Applicable Subcontractors and Sub-subcontractors overhead and profit percentages:
   a) Overhead adjustment: Ten percent (10%) of Subcontractor's own straight time labor cost.
   b) Profit adjustment: Five percent (5%), maximum of Subcontractor's own straight time labor cost plus the amount of the overhead adjustment for that labor cost calculated in accordance with the previous subparagraph.
   c) Combined overhead and profit adjustment: Ten percent (10%) Subcontractor's own purchased material cost.
   d) Combined overhead and profit adjustment for Sub-subcontractor Work: Five percent (5%) of the Sub-subcontractor Work.
   e) Subcontractor and Sub-subcontractor shall not receive overhead or profit on the premium portion of its overtime.

d. Justification for any change in Contract Time.
e. Credit for deletions from Contract, similarly documented.
f. Increases in cost changes in time are decided on the sole discretion of the Architect.

2. Support each claim for additional costs with additional information:
   a. Origin and date of claim.
   b. Dates and times work was performed, and by whom.
   c. Time records and wage rates paid.
   d. Invoices and receipts for products, equipment, and subcontracts, similarly documented.
3. For Time and Material work, submit itemized account and supporting data after completion of change, within time limits indicated in the Conditions of the Contract.
4. Change order shall reflect actual labor performed on the job. No change order will be allowed for "Book Value" of labor or materials.
5. If a change order is necessary on an item that was figured by "Book Value" prior to the change order portion of the Work being complete, then the Contractor may use the "Book Value" method in calculating his cost.
6. Contractor shall keep detailed records of all actual costs when the Work is performed. If actual time and materials is less than calculated book value, a credit shall be due the Owner.
7. Any change order for a credit shall reflect all labor and materials of Contractor, all Subcontractors, all Sub-subcontractors, suppliers, vendors, etc.

H. Execution of Change Orders: Architect will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.

I. After execution of Change Order, promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Sum.

J. Promptly revise progress schedules to reflect any change in Contract Time, revise sub-schedules to adjust times for other items of work affected by the change, and resubmit.

K. Promptly enter changes in Project Record Documents.

1.06 RELEASE OF LIENS

A. Contractor is required to submit a Partial Release and Waiver of Liens Form with each Application for Payment from subcontractors and suppliers for whom a partial payment is scheduled. In addition, supply Release of Lien for all contractors and suppliers of all materials to date.

B. Use “Partial Release and Waiver of Lien” form included in Section 006519.15.

1.07 CERTIFIED PAYROLL REPORTS

A. Contractor and each Subcontractor are required to submit a certified payroll with a statement of compliance with each Application for Payment.

B. Owner has the authority to verify payroll reports by checking employees’ pay stubs and personal identification.

C. Owner may withhold a portion of the Application for Payment if payroll reports have not been submitted for a portion of the Work.

1.08 APPLICATION FOR FINAL PAYMENT

A. Prepare Application for Final Payment as specified for progress payments, identifying total adjusted Contract Sum, previous payments, and sum remaining due.

B. Application for Final Payment will not be considered until the following have been accomplished:
   1. All closeout procedures specified in Section 017000.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

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SECTION 012100
ALLOWANCES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Cash allowances.

B. Payment and modification procedures relating to allowances.

1.02 RELATED REQUIREMENTS

A. Document 007200 - General Conditions: Additional items included in or excluded from allowances.

B. Section 012000 - Price and Payment Procedures: Additional payment and modification procedures.

1.03 CASH ALLOWANCES

A. Architect Responsibilities:
1. Consult with Contractor for consideration and selection of products, suppliers, and installers.
2. Select products in consultation with Owner and transmit decision to Contractor.
3. Prepare Change Order.

B. Contractor Responsibilities:
1. Assist Architect in selection of products, suppliers , and installers.
2. Obtain proposals from suppliers and installers and offer recommendations.
3. On notification of which products have been selected, execute purchase agreement with designated supplier and installer.
4. Arrange for and process shop drawings, product data, and material and color samples as requested. Arrange for delivery.
5. Promptly inspect products upon delivery for completeness, damage, and defects. Submit claims for transportation damage.

C. Cost of providing the Work of the allowances will be paid up to the amount scheduled and based on the substantiation of actual costs submitted.

D. Architect will determine the actual amount by evaluating the accuracy and completeness of the cost or pricing data submitted.

E. Differences in costs above the cash allowances will be adjusted by Change Order.

F. **The Contractor shall carry the full amount of the Allowance in their Contract Sum as well as all Overhead and Profit (O&P) associated with that total Allowance amount. As such, while there is still an Allowance balance remaining to fund additional services, the Contractor will <u>not</u> be permitted to include O&P in their proposal or in proposals from thier subcontractors.** Subcontractors are still permited all applicable mark-ups for O&P as defined in Section 012000.

G. Any unexpended funds of the scheduled allowances will be returned to the Owner as a Credit Change Order.

1.04 ALLOWANCES SCHEDULE

A. General Construction Contract (GCC)

1. General Allowance: Include the sum of Three Hundred Twenty Thousand Dollars ($320,000.00) for the Contract Modification Procedures specified in Section 012000 - Price and Payment Procedures and Section 3.8 of AIA A201-2017 General Conditions of the Contract for Construction. This allowance will be used to cover changes, field conditions, unforeseen problems, or Owner requests.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 012200
UNIT PRICES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. List of unit prices, for use in preparing Bids.

B. Measurement and payment criteria applicable to Work performed under a unit price payment method.

C. Defect assessment and non-payment for rejected work.

1.02 RELATED REQUIREMENTS

A. Section 012000 - Price and Payment Procedures: Additional payment and modification procedures.

1.03 COSTS INCLUDED

A. Unit Prices included on the Bid Form shall include full compensation for all required labor, products, tools, equipment, plant, transportation, services and incidentals; erection, application or installation of an item of the Work; overhead and profit.

1.04 UNIT QUANTITIES SPECIFIED

A. Quantities indicated in the Bid Form are for bidding and contract purposes only. Quantities and measurements of actual Work will determine the payment amount.

1.05 MEASUREMENT OF QUANTITIES

A. Measurement methods delineated in the individual specification sections complement the criteria of this section. In the event of conflict, the requirements of the individual specification section govern.

B. Take all measurements and compute quantities. Measurements and quantities will be verified by Architect.

C. Assist by providing necessary equipment, workers, and survey personnel as required.

D. Measurement by Weight: Concrete reinforcing steel, rolled or formed steel or other metal shapes will be measured by handbook weights. Welded assemblies will be measured by handbook or scale weight.

E. Measurement by Volume: Measured by cubic dimension using mean length, width and height or thickness.

F. Measurement by Area: Measured by square dimension using mean length and width or radius.

G. Linear Measurement: Measured by linear dimension, at the item centerline or mean chord.

H. Stipulated Price Measurement: Items measured by weight, volume, area, or linear means or combination, as appropriate, as a completed item or unit of the Work.

1.06 PAYMENT

A. Payment for Work governed by unit prices will be made on the basis of the actual measurements and quantities of Work that is incorporated in or made necessary by the Work and accepted by the Architect, multiplied by the unit price.

B. Payment will not be made for any of the following:
1. Products wasted or disposed of in a manner that is not acceptable.
2. Products determined as unacceptable before or after placement.
3. Products not completely unloaded from the transporting vehicle.
4. Products placed beyond the lines and levels of the required Work.
5. Products remaining on hand after completion of the Work.
6. Loading, hauling, and disposing of rejected Products.

1.07 DEFECT ASSESSMENT

A. Replace Work, or portions of the Work, not complying with specified requirements.

B. If, in the opinion of Architect, it is not practical to remove and replace the Work, Architect will direct one of the following remedies:
1. The defective Work may remain, but the unit price will be adjusted to a new unit price at the discretion of Architect.
2. The defective Work will be partially repaired to the instructions of the Architect, and the unit price will be adjusted to a new unit price at the discretion of Architect.

C. The individual specification sections may modify these options or may identify a specific formula or percentage price reduction.

D. The authority of Architect to assess the defect and identify payment adjustment is final.

1.08 SCHEDULE OF UNIT PRICES

A. Extra Excavation, Measurement and Payment: Excavation: For the purpose of this project, the following definitions shall be applicable for additional earth excavation and for rock excavation if such excavations are authorized by the Architect.
1. Boulder: Any stone exceeding 3/4 cubic yards in volume. Any stone up to this size shall be deemed to be "earth" for the purpose of classifying type of excavation.
2. Trench Excavation: Any excavation which is more than 18" in depth and less than 4'-0" in width will be classified as Trench Excavation.
3. Open Excavation: All other excavation except as described in "Trench Excavation" above whether earth or rock will be classified as Open Excavation.
4. Maximum Measurement Lines: The maximum line for horizontal measurements for trench and open excavation shall be not more than 12" on each side of the work to be installed. Payment for the additional earth excavation and for rock excavation, if encountered, will be made on the basis of measurements not exceeding the above.

B. **Unit Price #1: Excavation & Removal from Site of Unsuitable Fill.**
1. Measure by the cubic yard (CY), actual removed measurement shall include excavation, removal, hauling and disposal to achieve required grade or elevation. A submittal of the final tally of hauling tickets will be required for confirmation of quantities.

C. **Unit Price #2: Fill Placement (Soil Materials)**
   1. Measure by the cubic yard (CY), in-place measurement.
   2. Shall include supplying, delivering, placing, compacting, and testing to achieve required uniform grade or depth.

D. **Unit Price #3: Fill Placement (select granular fill)**
   1. Measure by the cubic yard (CY), in-place measurement.
   2. Shall include supplying, delivering, placing, compacting, and testing to achieve required uniform grade or depth.

E. **Unit Price #4: General Rock Removal.**
   1. General Rock Removal per cubic yard (CY), in-place measurement
   2. The foregoing unit prices include overhead, profit, and all other expenses incidental to the Work. Include in the bid sum all additional costs in connection with quantity changes that are not compensated for at the given unit prices.

F. **Unit Price #5: Trench and Pier Rock Removal.**
   1. Trench and Pier Rock Removal per cubic yard (CY), in-place measurement
   2. The foregoing unit prices include overhead, profit, and all other expenses incidental to the Work. Include in the bid sum all additional costs in connection with quantity changes that are not compensated for at the given unit prices.

G. **Unit Price #6: Fluid-Applied Flooring Moisture Mitigation** - Material & Labor costs/s.f.;
   1. Provide unit pricing per square foot for all materials and labor necessary for fluid-applied flooring moisture mitigation based on the use of Dur-A-Flex Dur-A-Glaze MVP Primer.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

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END OF SECTION

SECTION 012300
ALTERNATES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Description of Alternates.

B. Procedures for pricing Alternates.

C. Documentation of changes to Contract Sum and Contract Time.

1.02 ACCEPTANCE OF ALTERNATES

A. Alternates quoted on Bid Forms will be reviewed and accepted or rejected at Owner's option. Accepted Alternates will be identified in the Owner-Contractor Agreement.

B. Coordinate related work and modify surrounding work to integrate the Work of each Alternate.

C. The Base Bids for all contracts are the work that is specified and indicated in the Project Manual and the Contract Drawings.

1.03 SCHEDULE OF ALTERNATES

A. **Alternate DEDUCT No. GCC-01 - Elevator Deduct:**
1. Alternate Item: Provide credits for all labor and materials required for eliminating the Base Bid Work of providing and installing the project elevator. This future elevator shaft will be 1-HR Rated with Type "X" 5/8" GWB each side of wall framing with smoke tight joints top & bottom. Walls between ALL floors MUST align to allow installation of the elevator in the future. Entered number for this Alternate DEDUCT will be the delta of credits versus adds for all labor and materials.

B. **Alternate DEDUCT No. GCC-02 - Gravel Parking Lot in lieu of Asphalt:**
1. Alternate Item: Provide credits for all labor and materials required for eliminating the Base Bid Work of providing asphalt surfacing for the project parking lot. Replace with gravel surfacing throughout as per detail on Drawing D-1. Entered number for this Alternate DEDUCT will be the delta of credits versus adds for all materials and labor.

C. **Alternate DEDUCT No. GCC-03 - Asphalt Shingles in lieu of Standing Seam Roofing:**
1. Alternate Item: Provide credits for all labor and materials required for eliminating the Base Bid Work of aluminum standing seam metal roof panel system and replace with an asphalt shingle roofing system. Asphalt shingles Basis of Design shall be CertainTeed Grand Manor, as per Specification 073113 in the Project Manual. Provide all materials and components and necessary labor as per this specification. Entered number for this Alternate DEDUCT will be the delta of credits versus adds for all material and labor.

D. **Alternate DEDUCT No. GCC-04 - Delete Sixty (60) Parking Spaces:**
1. Alternate Item: Provide credits for all labor and materials required for eliminating the Base Bid Work of Sixty (60) parking spaces located on the east side of the new building. Parking islands, landscaping and site lighting poles to be as detailed below. Replace entire area with seeded grass as specified elsewhere on the project. Entered number for

this Alternate DEDUCT will be the delta of credits versus adds for all labor and materials.

a. Remove from scope all parking islands in their entirety including all related landscaping.
b. Remove from scope all site light poles and electrical wiring. DO provide conduit stub-ups at all light pole locations with drag lines for future buildout.
c. ALL storm drainage inlets, outlets, culverts and piping to be constructed.

E. **Alternate DEDUCT No. GCC-05 - Delete Fire Sprinkler System:**

1. Alternate Item: Provide credits for all labor and materials required for eliminating the Base Bid Work of the entire fire sprinkler system. Entered number for this Alternate DEDUCT will be the total of all credits for all material and labor.
   a. This Alternate DEDUCT must be taken along with Alternate DEDUCT GCC-06.

F. **Alternate DEDUCT No. GCC-06 - Delete Fire Sprinkler Storage Tank System:**

1. Alternate Item: Provide credits for all labor and materials required for eliminating the Base Bid Work of the Fire Sprinkler Water Storage Tank System and all related appurtenances as detailed on the Drawings and Specifications.
   a. This Alternate DEDUCT must be taken along with Alternate DEDUCT GCC-05.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 012500
SUBSTITUTION PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Procedural requirements for proposed substitutions.

1.02 RELATED REQUIREMENTS

A. Section 002113 - Instructions to Bidders: Restrictions on timing of substitution requests.

B. Section 012100 - Allowances, for cash allowances affecting this section.

C. Section 012200 - Unit Prices, for additional unit price requirements.

D. Section 012300 - Alternates, for product alternatives affecting this section.

E. Section 013000 - Administrative Requirements: Submittal procedures, coordination.

F. Section 016000 - Product Requirements: Fundamental product requirements, product options, delivery, storage, and handling.

1.03 DEFINITIONS

A. Substitutions: Changes from Contract Documents requirements proposed by Contractor to materials, products, assemblies, and equipment.
   1. Substitutions for Cause: Proposed due to changed Project circumstances beyond Contractor's control.
      a. Unavailability.
      b. Regulatory changes.
   2. Substitutions for Convenience: Proposed due to possibility of offering substantial advantage to the Project.
      a. Substitution requests offering advantages solely to the Contractor will not be considered.

B. Substitutions: See General Conditions for definition.

1.04 REFERENCE STANDARDS

A. CSI/CSC Form 1.5C - Substitution Request (During the Bidding/Negotiating Stage) Current Edition.

B. CSI/CSC Form 13.1A - Substitution Request (After the Bidding/Negotiating Phase) Current Edition.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 GENERAL REQUIREMENTS

A. A Substitution Request for products, assemblies, materials, and equipment constitutes a representation that the submitter:
   1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product, equipment, assembly, or system.
   2. Agrees to provide the same warranty for the substitution as for the specified product.
   3. Agrees to provide same or equivalent maintenance service and source of replacement parts, as applicable.
   4. Agrees to coordinate installation and make changes to other work that may be required for the work to be complete, with no additional cost to Owner.
   5. Waives claims for additional costs or time extension that may subsequently become apparent.
   6. Agrees to reimburse Owner and Architect for review or redesign services associated with re-approval by authorities and/or Licensed Professionals of Record.

B. A Substitution Request for specified installer constitutes a representation that the submitter:
   1. Has acted in good faith to obtain services of specified installer, but was unable to come to commercial, or other terms.

C. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents. Burden of proof is on proposer.
   1. Note explicitly any non-compliant characteristics.

D. Content: Include information necessary for tracking the status of each Substitution Request, and information necessary to provide an actionable response.
   1. No specific form is required. Contractor's Substitution Request documentation must include the following:
      a. Project Information:
         1) Official project name, and any additional required identifiers established in Contract Documents.
      b. Substitution Request Information:
         1) Discrete and consecutive Substitution Request number, and descriptive subject/title.
         2) Indication of whether the substitution is for cause or convenience.
         3) Issue date.
         4) Reference to particular Contract Document(s) specification section number, title, and article/paragraph(s).
         5) Description of Substitution.
         6) Reason why the specified item cannot be provided.
         7) Differences between proposed substitution and specified item.
         8) Description of how proposed substitution affects other parts of work.
      c. Attached Comparative Data: **Provide point-by-point, side-by-side comparison addressing essential attributes specified**, as appropriate and relevant for the item:
         1) Physical characteristics.
         2) In-service performance.
         3) Expected durability.
         4) Visual effect.
         5) Sustainable design features.
         6) Warranties.

7) Other salient features and requirements.
8) Include, as appropriate or requested, the following types of documentation:
a) Product Data:
b) Samples.
c) Certificates, test, reports or similar qualification data.
d) Drawings, when required to show impact on adjacent construction elements.

d. Impact of Substitution:
1) Savings to Owner for accepting substitution.

E. Limit each request to a single proposed substitution item.
1. Submit an electronic document, combining the request form with supporting data into single document.

3.02 SUBSTITUTION PROCEDURES DURING PROCUREMENT

A. Section 002113 - Instructions to Bidders specifies time restrictions for submitting requests for substitutions during the bidding period, and the documents required.

B. Submittal Form (before award of contract):
1. Submit substitution requests by completing a Substitution Request on the provided Fax Form (During the Bidding/Negotiating Stage). See this form for additional information and instructions. Use only this form; other forms of submission are unacceptable.

C. Owner will consider requests for substitutions only if submitted in compliance with this specification at least 5 days prior to the date for receipt of bids.

3.03 SUBSTITUTION PROCEDURES DURING CONSTRUCTION

A. Submittal Form (after award of contract):
1. Submit substitution requests by completing CSI/CSC Form 13.1A - Substitution Request. See this form for additional information and instructions. Use only this form; other forms of submission are unacceptable.

B. **Architect will consider requests for substitutions only within 15 days after date of Agreement.**

C. Submit request for Substitution for Cause within 14 days of discovery of need for substitution, but not later than 14 days prior to time required for review and approval by Architect, in order to stay on approved project schedule.

3.04 RESOLUTION

A. Architect may request additional information and documentation prior to rendering a decision. Provide this data in an expeditious manner.

B. Architect will notify Contractor in writing of decision to accept or reject request.
1. Architect's decision following review of proposed substitution will be noted on the submitted form.

3.05 ACCEPTANCE

A. Accepted substitutions change the work of the Project. They will be documented and incorporated into work of the project by Change Order, Construction Change Directive,

Architectural Supplementary Instructions, or similar instruments provided for in the Conditions of the Contract.

3.06 CLOSEOUT ACTIVITIES

A. See Section 017800 - Closeout Submittals, for closeout submittals.

B. Include completed Substitution Request Forms as part of the Project record. Include both approved and rejected Requests.

END OF SECTION

SECTION 013000
ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Electronic document submittal service.

B. Preconstruction meeting.

C. Site mobilization meeting.

D. Progress meetings.

E. Construction progress schedule.

F. Required reports to document construction progress.

G. Availability of electronic drawing files for use by Contractor.

H. Progress photographs.

I. Coordination drawings.

J. Submittals for review, information, and project closeout.

K. Number of copies of submittals.

L. Requests for Interpretation (RFI) procedures.

M. Submittal procedures.

1.02 RELATED REQUIREMENTS

A. Section 007200 - General Conditions: Dates for applications for payment.

B. Section 016000 - Product Requirements: General product requirements.

C. Section 017000 - Execution and Closeout Requirements: Additional coordination requirements.

D. Section 017800 - Closeout Submittals: Project record documents; operation and maintenance data; warranties and bonds.

E. Section 019020 - Enclosure Commissioning Requirements: Additional procedures and testing related to building envelope.

1.03 PROJECT COORDINATOR

A. Project Coordinator: Owner's Representative (OR).

B. Cooperate with the Project Coord in allocation of mobilization areas of site; for field offices and sheds, for delivery access, traffic, and parking facilities.

C. During construction, coordinate use of site and facilities through the Project Coordinator.

D. Comply with instructions of the Project Coordinator for use of temporary utilities and construction facilities. Responsibility for providing temporary utilities and construction facilities is identified in Section 015100 - Temporary Utilities.

E. Coordinate field engineering and layout work under instructions of the Project Coordinator.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 ELECTRONIC DOCUMENT SUBMITTAL SERVICE

A. All documents transmitted for purposes of administration of the contract are preferred to be in electronic (PDF) format and transmitted via an Internet-based submittal service that receives, logs and stores documents, provides electronic stamping and signatures, and notifies addressees via email. The Architect uses Newforma for this purpose and the Contractor will be requested to communicate all documentation through this system. The Contractor will not be charged any licensing or usage fees for using this system.
   1. Besides submittals for review, information, and closeout, this procedure applies to Requests for Interpretation (RFIs), progress documentation, contract modification documents (e.g. supplementary instructions, change proposals, change orders), applications for payment, field reports and meeting minutes, correction punchlists, and any other document any participant wishes to make part of the project record.
   2. Contractor is required to use this service.
   3. It is Contractor's responsibility to submit documents in allowable format.
   4. Subcontractors and suppliers are to be permitted to use the service at no extra charge.
   5. Users of the service need an email address, Internet access, and will use Newforma Info Exchange for submission and PDF review. Access to Newforma Info Exchange will be provided by the Architect.
   6. Contractor is responsible for image resolution of PDF documents; minimum 200 dots per inch utilizing original document size; increase resolution as required to adequately present the information.
   7. Provide and transmit full color reproduction of PDF documents requiring color to convey intent and compliance.
   8. Paper document transmittals will not be reviewed in lieu of use of the electronic service; emailed PDF documents will not be reviewed.
   9. All other specified submittal and document transmission procedures apply, except that electronic document requirements do not apply to samples or color selection charts.

B. Submittal Service: The selected service is:
   1. Newforma Project Center: www.newforma.com.

3.02 PRECONSTRUCTION MEETING

A. Architect will schedule a meeting after Notice of Award.

B. Attendance Required:
   1. Owner.
   2. Architect.
   3. General Contractor.

C. Agenda:

1. Execution of Contractor's Agreements.
2. Submission of executed bonds and insurance certificates.
3. Distribution of Contract Documents.
4. Submission of list of subcontractors, list of products, schedule of values, and progress schedule.
5. Designation of personnel representing the parties to Contract, areas of responsibility and contact information.
6. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
7. Scheduling.
8. Scheduling activities of a Geotechnical Engineer.

D. **General Contractor (GC)** to record minutes and distribute copies via the Electronic Document Submittal Service or via email **within two days after meeting** to participants, with copies to Architect, Owner, participants, and those affected by decisions made.

3.03 SITE MOBILIZATION MEETING

A. Schedule a meeting at the Project site prior to Contractor occupancy. Coordinate date options with Architect and Owner prior to scheduling. Issue Microsoft Outlook Meeting Invite to all required parties.

B. Attendance Required:
1. GC.
2. Owner.
3. Architect.
4. Special consultants.
5. Contractor's superintendent.
6. Major subcontractors.

C. Agenda:
1. Use of premises by GC and Major Trade Sub-Contractors.
2. Owner's requirements.
3. Construction facilities and controls provided by Owner.
4. Temporary utilities provided by Owner.
5. Survey and building layout.
6. Security and housekeeping procedures.
7. Schedules.
8. Application for payment procedures.
9. Procedures for testing and inspections.
10. Procedures for maintaining record documents.

D. **General Contractor (GC)** shall record minutes and distribute copies via the Electronic Document Submittal Service or via email **within two days after meeting** to participants, with copies to Architect, Owner, participants, and those affected by decisions made.

3.04 PROGRESS MEETINGS

A. GC shall make arrangements for bi-weekly on-site meetings, prepare agenda with copies for participants, preside at meetings.

B. Attendance Required:
1. Contractor.

2. Owner.
3. Architect.
4. Special consultants, as deemed necessary.
5. Contractor's superintendent.
6. Major Trade Sub-Contractors.

C. Agenda:
1. Review minutes of previous meetings.
2. Review of work progress.
3. Field observations, problems, and decisions.
4. Identification of problems that impede, or will impede, planned progress.
5. Review of submittals schedule and status of submittals.
6. Review of off-site fabrication and delivery schedules.
7. Maintenance of progress schedule.
8. Corrective measures to regain projected schedules.
9. **Planned progress during succeeding work period via issuance of a 2 Week Look-Ahead Document to be assembled and coordinated by the GC with coordinated input from all Major Sub-Contractors for scope and anticipated timelines.**
10. Coordination of projected progress.
11. Maintenance of quality and work standards.
12. Effect of proposed changes on progress schedule and coordination.
13. Other business relating to work.

D. **General Contractor (GC)** to record minutes and distribute copies via the Electronic Document Submittal Service or via email **within two days after meeting** to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

3.05 PREINSTALLATION CONFERENCES BY GC

A. GC shall conduct a pre-installation conference at Project Site before each construction activity that requires coordination with other construction.

B. Pre-installation Conferences: For each as required by individual Specification Sections, and as follows:
1. Site Utilities
2. Structural Framing
3. Masonry (Mock-Up Review)
4. Foam-in-Place Insulation
5. Doors & Frames/Door Hardware/Access Control System (All subcontractors at a single, coordinated pre-installation meeting)
6. Epoxy Flooring Systems
7. Intumescent Mastic Fireproofing

C. 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. Advise Architect and Owner's Representative of scheduled meeting dates. **All Preinstallation Conferences shall be scheduled to coincide with the established bi-weekly on-site Construction Progress Meeting dates and shall occur either 1 hour before or 1 hour after the bi-weekly meeting start time.**

D. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
1. The Contract Documents.

2. Options.
3. Purchases.
4. Deliveries.
5. Review of mockups.
6. Possible conflicts.
7. Compatibility problems.
8. Time schedules.
9. Weather limitations.
10. Manufacturer's written recommendations.
11. Acceptability of substrates.
12. Temporary facilities and controls.
13. Space and access limitations.
14. Regulations of authorities having jurisdiction.
15. Testing and inspecting requirements.
16. Installation procedures.
17. Coordination with other work.
18. Required performance results.
19. Protection of adjacent work.
20. Protection of construction and personnel.

E. GC shall record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.

F. GC Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present.

G. 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.

3.06 CONSTRUCTION PROGRESS SCHEDULE- See Section 013216

3.07 MATERIAL LOCATION REPORTS BY GC

A. At monthly intervals to coincide with updated reports associated with the Monthly Payment Application Process per Section 012000, prepare and submit a comprehensive list of materials delivered to and stored at Project site.

B. Include materials previously reported plus items recently delivered.

C. Include statement of progress on and delivery dates for materials or items of equipment fabricated or stored away from Project site.

3.08 FIELD CONDITION REPORTS BY GC

A. Prepare and submit a detailed report to the Architect immediately upon discovery of a difference between field conditions and the contract documents.

B. Submit with a request for interpretation.

C. Include detailed description of the differing conditions, together with recommendations for changing the contract documents.

3.09 SPECIAL REPORTS BY GC

A. Prepare and submit a special report when an event of an unusual and significant nature occurs at the Project site.

B. Include chain of events, persons participating, response by Contractor's personnel, evaluation of results or effects, and similar pertinent information.

C. Advise Owner in advance when these events are known or predictable.

D. Submit Report within **one day** of occurrence and distribute copies to all parties affected by the occurrence.

3.10 PROGRESS PHOTOGRAPHS BY GC

A. Submit a minimum of twenty-four (24) photographs with each application for payment, taken not more than 3 days prior to submission of application for payment.

B. Maintain one set of all photographs at project site for reference; same copies as submitted, identified as such.

C. Photography Type: Digital; electronic files.

D. Provide photographs of site and construction throughout progress of work produced by photographer, acceptable to Architect.

E. In addition to periodic, recurring views, take photographs of each of the following events:
1. Completion of site clearing.
2. Excavations in progress.
3. Foundations in progress and upon completion.
4. Structural framing in progress and upon completion.
5. Enclosure of building, upon completion.
6. Final completion, minimum of (75) photos.

F. Take photographs as evidence of existing project conditions, before commencement ofdemolition, as follows:
1. All 4 cardinal views (N, S, E & W).
2. All conditions noted as different on the project documents or not noted at all..
3. Existing items to remain during construction.

G. Flag construction limits before taking existing condition photographs.

H. Substantial Completion Photographs: Take photographs after Date of Substantial Completion for submission as Record Documents; minimum 48 photos. Architect will direct photographer for desired views. **Do not include date stamp**.

I. Views:
1. Provide non-aerial photographs from four cardinal views at each specified time, until Date of Substantial Completion.
2. Select views showing status of construction and progress since last photographs were taken.
3. Consult with Architect for instructions on any additional views required.
4. Provide factual presentation.

5. Provide correct exposure and focus, high resolution and sharpness, maximum depth of field, and minimum distortion.
6. Point of View Sketch: Provide sketch identifying point of view of each photograph.

J. Digital Photographs: 24 bit color, minimum resolution of 1024 by 768, in JPG format; provide files unaltered by photo editing software.
1. Delivery Medium: Via Electronic Document Submittal Service under the View/File Transfer Tab
2. File Naming: Include project identification, date and time of view, and view identification.

3.11 COORDINATION DRAWINGS BY GC

A. Provide information as needed and general orchestration required by Project Scope for preparation of coordination drawings by all Trades and Subcontractors.

B. Responsibilities include but are not limited to the following key aspects:
1. Coordination Drawings for areas or floors with Mechanical work. Incorporate layouts of work into Coordination Drawing, including but not limited to piping, ductwork and equipment.
2. Show every specified Mechanical scope item. Distribute to all Subcontractors to incorporate and cross-coordinate their work.
3. Coordination Drawings for areas or floors with Plumbing work. Incorporate layouts of work into Coordination Drawing, including but not limited to piping, valves and equipment.
4. Show every specified Plumbing scope item. Distribute to all Subcontractors to incorporate and cross-coordinate their work.
5. Coordination Drawings for areas or floors with Electrical work. Incorporate layouts of work into Coordination Drawing, including but not limited to lighting, conduit, junction boxes, fire alarm systems and equipment.
6. Show every specified Electrical scope item. Distribute to all Subcontractors to incorporate and cross-coordinate their work.
7. Include coordination of Owner-provided Vendor(s) for IT/Communications, Security, Intercom, Speakers, etc. Owner Vendor(s) contact information will be proivided by Owner/Architect at/upon completion of the aforementioned Coordination Drawings for the Owner's Vendor(s) to add in their work scope, equipment/device locations and pathing for same. This does **not** include physical labor and/or materials by the GC or any of their Sub-Contractors. Any requirements for electrical tie-ins, mechanical ventilation, floor or wall penetrations and firestopping would be addressed as added scope and pursuant to Changes in Work requirements of the Contract for Construction.
8. Distribute completed and approved layouts on an area by area or floor by floor basis to all Subcontractors. Issue one (1) copy each to Project Coordinator and Architect.

C. General Contractor Responsibilities:
1. Direct the overall coordination drawing process.

D. Mechanical Sub-Contractor Responsibilities:
1. Initiate Coordination Drawings for areas or floors with Mechanical Sub-Contract work.
2. Provide Coordination Drawing Digital Data File for use by all Sub-Contractors. Show every specified Mechanical Sub-Contract scope item. Distribute to Plumbing and Electrical Sub-Contractors to incorporate their work.
3. Receive updated Coordination Drawing Digital Data File from Plumbing and Electrical Sub-Contractors after incorporation of work by each Sub-Contractor.

4. Distribute completed and approved layouts on an area by area or floor by floor basis to Plumbing and Electrical Sub-Contractors. Issue one (1) copy each to General Contractor and Architect.

E. Plumbing Sub-Contractor Responsibilities:
1. Receive Coordination Drawing Digital Data File from Mechanical Sub-Contractor.
2. Incorporate layouts of work into Coordination Drawing Digital Data File, including but not limited to piping, valves, and equipment. Return file to Mechanical Sub-Contractor for distribution.
3. Initiate and provide coordination drawings for areas or floors with no Mechanical Sub-Contract work.

F. Fire Sprinkler Sub-Contractor Responsibilities:
1. Receive Coordination Drawing Digital Data File from Plumbing Sub-Contractor.
2. Incorporate layouts of work into Coordination Drawing Digital Data File, including but not limited to piping, valves, and equipment. Return file to Mechanical Sub-Contractor for distribution.
3. Initiate and provide coordination drawings for areas or floors with no Mechanical or Plumbing Sub-Contract work.

G. Electrical Sub-Contractor Responsibilities:
1. Receive Coordination Drawing Digital Data File from Mechanical Sub-Contractor.
2. Incorporate layouts of work into Coordination Drawing Digital Data File, including but not limited to lighting, conduit, junction boxes, fire alarm systems, and equipment. Return file to Mechanical Sub-Contractor for distribution.
3. Initiate and provide coordination drawings for areas or floors with no Mechanical Sub-Contract, Plumbing Sub-Contract or Fire Sprinkler Sub-Contract work.

H. Coordination Drawing procedures shall be as indicated above and as follows:

Contractor:	Color Designation on Drawings:	Completed by Contractor within:
Mechanical	Orange Pen	Two (2) weeks from Project Start
Plumbing	Blue Pen	One (1) week from receipt
Sprinkler	Red Pen	One (1) week from receipt
Electrical	Green Pen	One (1) week from receipt

I. Review drawings with the Project Coordinator to review and resolve identified coordination drawing conflicts prior to submission to Architect.
1. Submit drawings to Architect and Engineer for approval only after coordination is completed and Contractor has initialed the completed drawings.
2. **Do not begin installations affected by the coordination drawings without Architect approval.**

J. Prepare and submit coordination drawings to achieve maximum utilization of space for efficient installation of different components and for coordination of installation of products and materials fabricated.

K. 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:
1. Use applicable Drawings as a basis for preparation of coordination drawings. Prepare sections, elevations, and details as needed to describe relationship of various systems and components.
2. Coordinate the addition of trade-specific information to the coordination drawings by multiple contractors in a sequence that best provides for coordination of the information

and resolution of conflicts between installed components before submitting for review.

3. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
4. Indicate space requirements for routine maintenance and for anticipated replacement of components during the life of the installation.
5. Show location and size of access doors required for access to concealed dampers, valves, and other controls.
6. Indicate required installation sequences.
7. Indicate dimensions shown on the Drawings. Specifically note dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to Architect indicating proposed resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.
8. Sheet Size: At least 24 by 36 inches but no larger than 30 by 42 inches at a scale suitable for presentation of the information.
9. Number of Copies: Submit one (1) copy of each submittal via the Electronic Document Submittal Service.
    a. Submit one additional hardcopy where Coordination Drawings are required for operation and maintenance manuals. Mark up and retain one returned copy as a Project Record Drawing.
10. Refer to individual Sections for Coordination Drawing requirements for Work in those Sections.

L. Coordination Drawing Organization: Organize coordination drawings as follows:

1. Floor Plans and Reflected Ceiling Plans: Show architectural and structural elements, and mechanical, plumbing, fire protection, fire alarm, and electrical Work. Show locations of visible ceiling-mounted devices relative to acoustical ceiling grid. Supplement plan drawings with section drawings where required to adequately represent the Work.
2. Plenum Space: Indicate subframing for support of ceiling and wall systems, mechanical and electrical equipment, and related Work. Locate components within ceiling plenum to accommodate layout of light fixtures indicated on Drawings. Indicate areas of conflict between light fixtures and other components.
3. Mechanical Rooms: Provide coordination drawings for mechanical rooms showing plans and elevations of mechanical, plumbing, fire protection, fire alarm, and electrical equipment.
4. Structural Penetrations: Indicate penetrations and openings required for all disciplines.
5. Mechanical and Plumbing Work: Show the following:
    a. Sizes and bottom elevations of ductwork, piping, and conduit runs, including insulation, bracing, flanges, and support systems.
    b. Dimensions of major components, such as dampers, valves, diffusers, access doors, cleanouts and electrical distribution equipment.
    c. Fire-rated enclosures around ductwork.
6. Electrical Work: Show the following:
    a. Runs of vertical and horizontal conduit 1-1/4 inch diameter and larger.
    b. Light fixture, exit light, emergency battery pack, smoke detector, and other fire alarm locations.
    c. Panel board, switch board, switchgear, transformer, busway, generator, and motor control center locations.
    d. Location of pull boxes and junction boxes, dimensioned from column center lines.
7. Fire-Protection System: Show the following:
    a. Locations of standpipes, mains piping, branch lines, pipe drops, and sprinkler heads.

8. Review: Architect will review coordination drawings to confirm that the Work is being coordinated, but not for the details of the coordination, which are the Contractor's responsibility. If the Architect determines that the coordination drawings are not being prepared in sufficient scope or detail, or are otherwise deficient, the Architect will so inform the Contractor, who shall make changes as directed and resubmit.

M. Coordination Digital Data Files: Prepare coordination digital data files in accordance with the following requirements:
1. File Preparation Format: Same digital data (AutoCAD) software program, version, and operating system as collectively agreed by all Major Sub-Contractors.
2. File Submittal Format: Submit or post coordination drawing files using format same as file preparation format and in PDF format.
3. At the Contractor's written request, a copy of the Architect's CAD base plan files will be provided for the Contractor's use in preparing Coordination Drawings for Project.

3.12 REQUESTS FOR INTERPRETATION (RFI)

A. Definition: A request seeking one of the following:
1. An interpretation, amplification, or clarification of some requirement of Contract Documents arising from inability to determine from them the exact material, process, or system to be installed; or when the elements of construction are required to occupy the same space (interference); or when an item of work is described differently at more than one place in the Contract Documents.
2. A resolution to an issue which has arisen due to field conditions and affects design intent.

B. Whenever possible, request clarifications at the next appropriate project progress meeting, with response entered into meeting minutes, rendering unnecessary the issuance of a formal RFI.

C. Preparation: Prepare an RFI immediately upon discovery of a need for interpretation of the Contract Documents. Failure to submit a RFI in a timely manner is not a legitimate cause for claiming additional costs or delays in execution of the work.
1. Prepare a separate RFI for each specific item.
a. Review, coordinate, and comment on requests originating with subcontractors and/or materials suppliers.
b. Do not forward requests which solely require internal coordination between subcontractors.
2. Prepare using software provided by the Electronic Document Submittal Service.
3. Combine RFI and its attachments into a single electronic file. PDF format is preferred.

D. Reason for the RFI: Prior to initiation of an RFI, carefully study all Contract Documents to confirm that information sufficient for their interpretation is definitely not included.
1. Include in each request Contractor's or other Prime Contractor's signature attesting to good faith effort to determine from the Contract Documents information requiring interpretation.
2. Unacceptable Uses for RFIs: Do not use RFIs to request the following::
a. Approval of submittals (use procedures specified elsewhere in this section).
b. Approval of substitutions (see Section - 016000 - Product Requirements)
c. Changes that entail change in Contract Time and Contract Sum (comply with provisions of the Conditions of the Contract).
3. Improper RFIs: Requests not prepared in compliance with requirements of this section, and/or missing key information required to render an actionable response. They will be returned without a response, with an explanatory notation.
4. Frivolous RFIs: Requests regarding information that is clearly indicated on, or reasonably inferable from, the Contract Documents, with no additional input required to

clarify the question. They will be returned without a response, with an explanatory notation.

a. The Owner reserves the right to assess the Contractor for the costs (on time-and-materials basis) incurred by the Architect, and any of its consultants, due to processing of such RFIs.

E. Content: Include identifiers necessary for tracking the status of each RFI, and information necessary to provide an actionable response.

1. Official Project name and number, and any additional required identifiers established in Contract Documents.
2. Owner's, Architect's, and Contractor's or other Major Sub-Contractor's names.
3. Issue date, and requested reply date.
4. Reference to particular Contract Document(s) requiring additional information/interpretation. Identify pertinent drawing and detail number and/or specification section number, title, and paragraph(s).
5. Annotations: Field dimensions and/or description of conditions which have engendered the request.
6. Contractor's or other Major Sub-Contractors suggested resolution: A written and/or a graphic solution, to scale, is required in cases where clarification of coordination issues is involved, for example; routing, clearances, and/or specific locations of work shown diagrammatically in Contract Documents. If applicable, state the likely impact of the suggested resolution on Contract Time or the Contract Sum.

F. Attachments: Include sketches, coordination drawings, descriptions, photos, submittals, and other information necessary to substantiate the reason for the request.

G. Review Time: Architect will respond and return RFIs to Contractor within 14 calendar days of receipt. For the purpose of establishing the start of the mandated response period, RFIs received after 12:00 noon will be considered as having been received on the following regular working day. Expedited requests from the Contractor by from the Architect will not be entertained for any reason other than circumstances outside of the control by the Contractor for timing of such RFI.

H. Responses: Content of answered RFIs will not constitute in any manner a directive or authorization to perform extra work or delay the project. If in Contractor's belief it is likely to lead to a change to Contract Sum or Contract Time, promptly issue a notice to this effect, and follow up with an appropriate Change Order request to Owner.

1. Response may include a request for additional information, in which case the original RFI will be deemed as having been answered, and an amended one is to be issued forthwith. Identify the amended RFI with an R suffix to the original number.
2. Do not extend applicability of a response to specific item to encompass other similar conditions, unless specifically so noted in the response.
3. Notify Architect within 3 calendar days if an additional or corrected response is required by submitting an amended version of the original RFI, identified as specified above.

3.13 ELECTRONIC DRAWING (CAD) FILES

A. Available from Architect at the Architect's discretion for the architectural (A) sheets.

B. Available from the Architect's Consultants, through the Architect, at the Consultants' discretion for all other sheets.

C. Architectural Detail Sheets and Mechanical Duct Plans will **not** be provided.

D. Contractor must sign a release form and pay a per sheet fee prior to transmission of the requested sheets.

3.14 SUBMITTALS FOR REVIEW

A. When the following are specified in individual sections, submit them for review:
   1. Product data.
   2. Design data.
   3. Shop drawings.
   4. Samples for selection.
   5. Samples for verification.

B. Submit to Architect and Architect's Consultants for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.

C. Samples will be reviewed only for aesthetic, color, or finish selection.

D. Product Data: **Modify manufacturer's standard schematic drawings and diagrams to supplement standard information and to provide information specifically applicable to the Work**. Delete or cross-out information not applicable. Submittal of standard product cutsheets with no indications to specifics on model number, size, color, etc. as required will be **cause for immediate Revise and Resubmit rejection**.

E. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 017800 - Closeout Submittals.

3.15 SUBMITTALS FOR INFORMATION

A. When the following are specified in individual sections, submit them for information:
   1. Design data.
   2. Certificates.
   3. Test reports.
   4. Inspection reports.
   5. Manufacturer's instructions.
   6. Manufacturer's field reports.
   7. Other types indicated.

B. Submit for Architect's knowledge as contract administrator or for Owner.

3.16 SUBMITTALS FOR PROJECT CLOSEOUT

A. Submit Correction Punch List for Substantial Completion.

B. Submit Final Correction Punch List for Substantial Completion.

C. When the following are specified in individual sections, submit them at project closeout in compliance with requirements of Section 017800 - Closeout Submittals:
   1. Project record documents.
   2. Operation and maintenance data.
   3. Warranties.
   4. Bonds.

5. Other types as indicated.

D. Final Property Survey.

E. Submit for Owner's benefit during and after project completion.

3.17 NUMBER OF COPIES OF SUBMITTALS

A. Electronic Documents: Submit one electronic copy in PDF format; an electronically-marked up file will be returned. Create PDFs at native size and right-side up; illegible files will be rejected.

B. Extra Copies at Project Closeout: See Section 017800.

C. Samples: Submit the number specified in individual specification sections; one of which will be retained by Architect. If not otherwise specified, provide two (2) pieces.
1. After review, produce duplicates.
2. Retained samples will not be returned to Contractor unless specifically so stated.

3.18 SUBMITTAL PROCEDURES

A. Transmit each submittal through the electronic document submittal service. **NOTE: For all structural steel, joist, decking, etc. Shop Drawing submittals, aside from the standard submittal to the electronic document service, one (1) Full-Sized hard copy each set must be mailed to the Architect and Structural Engineer (SE). Structural review will not begin until a hard copy is RECEIVED by the SE.**

B. Provide submittals of all products, materials, items and equipment shown in the contract documents whether or not they are specified items in the project manual.

C. Transmit each submittal with approved form through the Electronic Document Submittal Service.

D. Identify Project, Contractor, Subcontractor or supplier, date and revision date; pertinent drawing and detail number, and specification section number, as appropriate on each copy.

E. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of Products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with the requirements of the Work and Contract Documents.
1. Verify that portions of the submittal package provided by a subcontractor or supplier or provided directly by the Contractor are complete.
2. Correct any errors or omissions found prior to transmitting each submittal.
3. Incomplete submittal packages transmitted for review will be returned without action.
4. Architect or Consultant may identify any conspicuous errors or omissions on a submittal without prejudice to being held harmless to Contractor's examinations and responsibilities.

F. **Do not combine submittals of more than one specification section with submittals required by other specification sections unless otherwise specifically stated in the specifications.** If uncertainty exists as to where to upload a certain submittal, contact the architect via email for clarification.

G. Deliver samples and color selection charts to Architect at business address. Record transmittal of each sample required through the Electronic Document Submittal Service. Architect's review results will be posted and Contractor will be notifed through the electronic document submittal service.

H. Organize and transmit submittals in logical groupings to facilitate interrelation of several items.
   1. Finishes which involve Architect selection of colors, textures, or patterns.
   2. Associated items that require correlation for efficient function or for installation.

I. **Architect will not choose any exterior colors until the entire exterior submittal package requiring color samples is submitted and approved. Similar provisions and procedures are to be performed for the entire interior submittal package pertaining to color samples. The term "color samples" refers to actual material samples, per product, in the full line of specification section requested color options. Regardless of initial color selections made on the Finish Schedule, provide Full Color Line of Standard Colors.**

J. For each submittal for review, allow fourteen (14) days excluding delivery time to and from the Contractor.

K. Where the submitted product is the specified product and shop drawings are not otherwise required, provide product data sufficient to prove it is the specified product.

L. For each revised submittal for review, identify all changes made since previous submission.
   1. **The Architect and the Architect's Consultants are contracted by the Owner to review each submittal up to two (2) times. If the submittal process involes <u>three or more</u> submissions due to Contractor's or other Sub-Contractor's fault, the Architect, at his discretion, may charge the Contractor or other Sub-Contractor for the Architect's time or time incurred by the Architect's Consultants by submitting a bill to the Owner, who may deduct the amount from the Contractor's or other Sub-Contractor's application for payment.**

M. Distribute reviewed submittals, bearing Architect's approval stamp, as appropriate. Instruct parties to promptly report any inability to comply with requirements.

N. Multiple submittals of unacceptable materials will result in Contractor or other Sub-Contractor being charged for the Architect's time reviewing them.

O. Do not fabricate products or begin Work requiring submittals until return of submittal with Architect's approval.

END OF SECTION

SECTION 013216
CONSTRUCTION PROGRESS SCHEDULE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Preliminary schedule.

B. Construction progress schedule, bar chart type.

1.02 RELATED SECTIONS

A. Section 011100 - Summary Multiple Primes: Work Sequence

B. Section 013000 - Administrative Requirements: Daily construction reports.

C. Section 014000 - Quality Requirements: Other testing and inspection services.

D. Section 014533 - Code-Required Special Inspections: Schedule of required special inspections.

1.03 REFERENCE STANDARDS

A. AGC (CPSM) - Construction Planning and Scheduling Manual; 2012.

B. M-H (CPM) - CPM in Construction Management - Project Management with CPM 2015.

1.04 SUBMITTALS

A. Within fourteen (14) days after date established in Notice to Proceed, GCC shall submit preliminary schedule defining planned operations for the first 60 days of Work, with a general outline for remainder of Workand a cash requirement prediction based on indicated activities.
   1. Distribute to each Major (Site, Electrical, Mechanical, Plumbing and Fire Protection) Contractor for review, input and comments.

B. Each Prime Contractor and its subcontractors must provide schedule information for its Work to the General Construction Contractor within five (5) working days of receiving the preliminary schedule.

C. GCC shall revise preliminary schedule to include each Prime Contractor's schedule information. Submit revised schedule within 14 calendar days.

D. If preliminary schedule requires revision after review, submit revised schedule within 5 days.

E. Within 20 days after review of preliminary schedule, submit draft of proposed complete schedule for review.

F. Submit updated complete schedule for its Work with each Application for Payment. Updated schedule shall be provided in PDF format at a layout that will permit readibility at 11x17 printing size.

G. General Construction Contractor shall transmit an email in PDF format of same upon submittal of Payment Applications to Owner and Architect.

1.05 QUALITY ASSURANCE

A. Scheduler: Contractor's personnel or specialist Consultant specializing in CPM scheduling with three years minimum experience in scheduling construction work of a complexity comparable to this Project, and having use of computer facilities capable of delivering a detailed graphic printout within 48 hours of request.

B. Contractor's Administrative Personnel: Three years minimum experience in using and monitoring CPM schedules on comparable projects.

1.06 SCHEDULE FORMAT

A. Listings: In chronological order according to the start date for each activity. Identify each activity with the applicable specification section number.

B. Diagram Sheet Size: Maximum 22 x 17 inches.

C. Sheet Size: Multiples of 11 x 17 inches.

D. Scale and Spacing: To allow for notations and revisions.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 SCHEDULE - GENERAL

A. The schedule prepared by the GCC shall be the governing schedule.

B. All trades will appear on a coordinated schedule as scheduled by the General Construction Contractor

C. Coordinate work with all Subconsultants so that the work and schedule are not impeded.

D. Modify schedules to General Construction Contractor's master CPM schedule from commencement of work to completion of work.

E. It is the specific responsibility of EACH Contractor to respond in a timely manner to perform work needed in order for other Contractors to maintain their schedules. Failure to do so will be reflected in the division of delay damages.

3.02 PRELIMINARY SCHEDULE

A. Prepare preliminary schedule in the form of a horizontal bar chart.

3.03 CONTENT

A. Show complete sequence of construction by activity, with dates for beginning and completion of each element of construction.

B. Identify each item by specification section number.

C. Identify work of separate stages and other logically grouped activities.

D. Identify major milestones, including but not limited to, Project completion, punchlist, and turnover.

E. Provide sub-schedules for each stage of Work identified in Section 011100.

F. Provide sub-schedules to define critical portions of the entire schedule.

G. Include conferences and meetings in schedule.

H. Include all procurement, off-site, and construction activities.
   1. Procurement activities include: periods for submittal transmission, review, and approval; fabrication periods for major and critical trades.

I. Include separate activity for each portion of Work performed by Owner.

J. Include separate activities for Project completion, punchlist, and turnover.

K. Illustrate order and interdependence of activities and sequence of Work; how start of a given activity depends on completion of preceding activities and how completion of the activity may restrain start of following activities.

L. Show accumulated percentage of completion of each item, and total percentage of Work completed, as of the first day of each month.

M. Provide separate schedule of submittal dates for shop drawings, product data, and samples, owner-furnished products, products identified under Allowances, and dates reviewed submittals will be required from Architect. Indicate decision dates for selection of finishes.

N. Indicate delivery dates for owner-furnished products.

O. Show dates for each specified test.

P. Coordinate content with schedule of values specified in Section 012000 - Price and Payment Procedures.

Q. Provide legend for symbols and abbreviations used.

R. Show sufficient detail to allow visual checking of progress on a monthly basis.

3.04 BAR CHARTS

A. Include a separate bar for each major portion of Work or operation.

B. Identify the first work day of each week.

3.05 REVIEW AND EVALUATION OF SCHEDULE

A. Participate in joint review and evaluation of schedule with Architect, Project Coordinator, or both, at each submittal.

B. Evaluate project status to determine work behind schedule and work ahead of schedule.

C. After review, revise as necessary as result of review, and resubmit within 5 days.

3.06 UPDATING SCHEDULE (BY GCC)

A. Maintain schedules to record actual start and finish dates of completed activities.

B. Indicate progress of each activity to date of revision, with projected completion date of each activity.

C. Update diagrams to graphically depict current status of Work.

D. Identify activities modified since previous submittal, major changes in Work, and other identifiable changes.

E. Indicate changes required to maintain Date of Substantial Completion.

F. Submit reports required to support recommended changes including a 2-Week Look Ahead for every Construction Meeting.

G. Provide narrative report to define problem areas, anticipated delays, and impact on the schedule. Report corrective action taken or proposed and its effect.

3.07 DISTRIBUTION OF SCHEDULE

A. Distribute copies of updated schedules to Subcontractors, suppliers, Architect, Owner, Consultants, and other concerned parties.

B. Instruct recipients to promptly report, in writing and within 48 hours, problems anticipated by projections indicated in schedules.

3.08 RECOVERY SCHEDULE

A. When periodic update indicates the Work is fourteen (14) or more calendar days behind the current approved schedule, submit a separate recovery schedule indicating means by which Contractor intends to regain compliance with the schedule.

B. Indicate changes to working hours, working days, crew sizes, and equipment required to achieve compliance, and date by which recovery will be accomplished.

3.09 DELAYS

A. Delays in the schedule will be determined through the Agreement and the General Conditions of the Contract.

END OF SECTION

SECTION 014000
QUALITY REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Submittals.

B. Testing and inspection agencies and services.

C. Contractor's construction-related professional design services.

D. Contractor's design-related professional design services.

E. Control of installation.

F. Mock-ups.

G. Tolerances.

H. Manufacturers' field services.

I. Defect Assessment.

1.02 RELATED REQUIREMENTS

A. Document 003132 - Geotechnical Data: Soil investigation data.

B. Document 007200 - General Conditions: Inspections and approvals required by public authorities.

C. Section 013000 - Administrative Requirements: Submittal procedures.

D. Section 014216 - Definitions.

E. Section 016000 - Product Requirements: Requirements for material and product quality.

1.03 REFERENCE STANDARDS

A. ASTM E699 - Standard Specification for Agencies Involved in Testing, Quality Assurance, and Evaluating of Manufactured Building Components 2016.

B. IAS AC89 - Accreditation Criteria for Testing Laboratories 2018.

1.04 CONTRACTOR'S CONSTRUCTION-RELATED PROFESSIONAL DESIGN SERVICES

A. Coordination: Contractor's professional design services are subject to requirements of project's Conditions for Construction Contract.

B. Provide such engineering design services as may be necessary to plan and safely conduct certain construction operations, pertaining to, but not limited to the following:
   1. Temporary sheeting, shoring, or supports.
   2. Temporary scaffolding.

3. Temporary bracing.
4. Temporary falsework for support of spanning or arched structures.
5. Temporary stairs or steps required for construction access only.
6. Temporary hoist(s) and rigging.

1.05 CONTRACTOR'S DESIGN-RELATED PROFESSIONAL DESIGN SERVICES

A. Coordination: Contractor's professional design services are subject to requirements of project's Conditions for Construction Contract.

B. Base design on performance and/or design criteria indicated in individual specification sections.

C. Scope of Contractor's Professional Design Services: Provide for the following items of work:
1. Structural Design of Formwork: As described in Section 031000 - Concrete Forming and Accessories.
2. Concrete Mix Design: As described in Section 033000 - Cast-in-Place Concrete. No specific designer qualifications are required.
3. Concrete Mix and Structural Design: As described in Section 034113 - Precast Concrete Hollow Core Planks.
4. Concrete Mix and Structural Design: As described in Section 034900 - Glass-Fiber Reinforced Concrete.
5. Structural Design of Metal Framing: As described in Section 054000 - Cold-Formed Metal Framing.
6. Structural Design of Steel Trusses: As described in Section 054400 - Cold-Formed Metal Trusses.
7. Sprinkler Layout: Coordinate with ceiling installation, detailed pipe layout, and hydraulic calculations as described in Section 211300 - Fire-Suppression Sprinkler Systems.
8. Structural Design of Seismic Controls: As described in Section 220548 - Vibration and Seismic Controls for Plumbing Piping and Equipment.

1.06 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Design Data: Submit for Architect's knowledge as contract administrator for the limited purpose of assessing compliance with information given and the design concept expressed in the contract documents, or for Owner's information.

C. Test Reports: After each test/inspection and within five (5) days of receiving test data, promptly submit two copies of report to Architect and to Contractor.
1. Include:
a. Date issued.
b. Project title and number.
c. Name of inspector.
d. Date and time of sampling or inspection.
e. Identification of product and specifications section.
f. Location in the Project.
g. Type of test/inspection.
h. Date of test/inspection.
i. Results of test/inspection.
j. Conformance with or deviation from Contract Documents.
k. Photographic or drawn graphic supplements for further clarification.

l. Pertinent discoveries.
m. When requested by Architect, provide interpretation of results.

2. Test report submittals are for Architect's knowledge as contract administrator for the limited purpose of assessing compliance with information given and the design concept expressed in the contract documents, or for Owner's information.

D. Certificates: When specified in individual specification sections, submit certification by the manufacturer and Contractor or installation/application subcontractor to Architect, in quantities specified for Product Data.

1. Indicate material or product complies with or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
2. Certificates may be recent or previous test results on material or product, but must be acceptable to Architect.

E. Manufacturer's Instructions: When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, for the Owner's information. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

F. Manufacturer's Field Reports: Submit reports for Architect's benefit as contract administrator or for Owner.

1. Submit report within 14 days of observation to Architect for information.
2. Submit for information for the limited purpose of assessing compliance with information given and the design concept expressed in the contract documents.

1.07 REFERENCES AND STANDARDS

A. For products and workmanship specified by reference to a document or documents not included in the Project Manual, also referred to as reference standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.

B. Comply with reference standard of date of issue current on date of Contract Documents, except where a specific date is established by applicable code.

C. Obtain copies of standards where required by product specification sections.

D. Should specified reference standards conflict with Contract Documents, request clarification from Architect before proceeding.

E. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of Architect shall be altered from the Contract Documents by mention or inference otherwise in any reference document.

1.08 Testing and Inspection Agencies and Services

A. Owner will employ and pay for services of an independent testing agency to perform required specified testing and inspection.

B. Contractor and all Sub-Contractors shall employ and pay for services of independent testing agency to perform specified testing where applicable in individual Project Manual Sections.

C. 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

3.01 CONTROL OF INSTALLATION

A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.

B. Comply with manufacturers' instructions, including each step in sequence.

C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.

D. Comply with specified standards as minimum quality for the work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

E. Have work performed by persons qualified to produce required and specified quality.

F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.

G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

3.02 MOCK-UPS

A. Before installing portions of the Work where mock-ups are required, construct mock-ups in location and size indicated for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work. The purpose of mock-up is to demonstrate the proposed range of aesthetic effects and workmanship.

B. Accepted mock-ups establish the standard of quality the Architect will use to judge the Work.

C. Integrated Exterior Mock-ups: Construct integrated exterior mock-up as indicated on drawings. Coordinate installation of exterior envelope materials and products as required in individual Specification Sections. Provide adequate supporting structure for mock-up materials as necessary.

D. Room Mock-ups: Construct room mock-ups as indicated on drawings. Coordinate installation of materials, products, and assemblies as required in specification sections; finish according to requirements. Provide required lighting and any supplemental lighting where required to enable Architect to evaluate quality of the mock-up.

E. Notify Architect and OR ten (10) working days in advance of dates and times when mock-ups will be constructed.

F. Tests shall be performed under provisions identified in this section and identified in the respective product specification sections.

G. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes. Use installers who will perform same tasks for the Work.

H. Obtain Architect's approval of mock-ups before starting work, fabrication, or construction.

1. Architect will issue written comments within seven (7) working days of initial review and each subsequent follow up review of each mock-up.
2. Make corrections as necessary until Architect's approval is issued.

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

J. Accepted mock-ups shall be a comparison standard for the remaining Work. Maintain mockups during construction in an undisturbed condition.

K. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.

3.03 TOLERANCES

A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.

B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Architect before proceeding.

C. Adjust products to appropriate dimensions; position before securing products in place.

3.04 TESTING AND INSPECTION

A. See individual specification sections for testing and inspection required.

B. Testing Agency Duties:
1. Test samples of mixes submitted by Contractor.
2. Provide qualified personnel at site. Cooperate with Architect and Contractor in performance of services.
3. Perform specified sampling and testing of products in accordance with specified standards.
4. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
5. Ascertain compliance of materials and mixes with requirements of Contract Documents.
6. Promptly notify Architect and Contractor of observed irregularities or non-compliance of Work or products.
7. Perform additional tests and inspections required by Architect.
8. Attend preconstruction meetings, preinstallation conferences, and progress meetingswhen requested by the Architect.
9. Submit reports of all tests/inspections specified.

C. Limits on Testing/Inspection Agency Authority:
1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
2. Agency may not approve or accept any portion of the Work.
3. Agency may not assume any duties of Contractor.
4. Agency has no authority to stop the Work.
5. Agency has no authority to direct the work of sub-contractors. Address all comments to Contractor.

D. Contractor Responsibilities:
1. Deliver to agency at designated location, adequate samples of materials proposed to be used that require testing, along with proposed mix designs.

2. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements.
3. Cooperate with laboratory personnel, and provide access to the Work and to manufacturers' facilities.
4. Provide incidental labor and facilities:
    a. To provide access to Work to be tested/inspected.
    b. To obtain and handle samples at the site or at source of Products to be tested/inspected.
    c. To facilitate tests/inspections.
    d. To provide storage and curing of test samples.
5. Notify Architect, Project Coordinator, and laboratory 48 hours prior to expected time for operations requiring testing/inspection services.
6. **Schedule times for test, inspections, and similar activities.**
7. Coordinate sequence of activities to accommodate required tests and inspections with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.

E. Re-testing required because of non-compliance with specified requirements shall be performed by the same agency on instructions by Architect.
1. Retest original failed test and perform two additional tests at new locations to be determined by Architect and Testing Agency.
2. Continue retesting until compliance is achieved.

F. Re-testing required because of non-compliance with specified requirements shall be paid for by Contractor as appropriate.

3.05 MANUFACTURERS' FIELD SERVICES

A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust, and balance equipment as applicable, and to initiate instructions when necessary.

B. Submit qualifications of observer to Architect 30 days in advance of required observations.
1. Observer subject to approval of Architect.

C. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

3.06 DEFECT ASSESSMENT

A. Replace Work or portions of the Work not complying with specified requirements.

B. If, in the opinion of Architect, it is not practical to remove and replace the work, Architect will direct an appropriate remedy or adjust payment.

END OF SECTION

SECTION 014100
REGULATORY REQUIREMENTS

PART 1 GENERAL

1.01 REGULATIONS

A. All applicable Federal and State Laws, municipal ordinances, and the rules and regulations, of all authorities having jurisdiction over construction of the project shall apply to the Contract throughout, and they will be deemed to be included in the Contract the same as though herein written out in full.

B. The Contractor shall conform to the Federal OSHA and State of New York construction safety requirements. The Contractor's attention is specifically directed to the provisions of the OSHA Safety and Health Standards for Construction, which require that all banks and trenches, over a specified height, shall be shored or sloped to insure stability of the walls of the excavation.

C. All additional costs, if any incurred by reason of any necessity of complying with such laws, ordinances, rules and regulations, as the same may from time to time be amended, shall be borne by the Contractor. The governing agency shall have no duty to inform the Contractor of such laws, ordinances, rules and regulations or amendments thereto.

D. TAXES:
1. The Contractor shall pay for any and all taxes, occupational, privilege, license, excise, gross income, gross receipts, sales, use, payroll, documentary or other taxes applicable to this contract which are effective or are scheduled to become effective thirty (30) days after the date of Proposals.

E. UNEMPLOYMENT COMPENSATION:
1. The Contractor shall comply with the State Unemployment Insurance or Compensation Act and wherever permissible shall elect to become subject to the Act.

F. LICENSE/REGISTRATION:
1. For work in states where contractor License Laws are in effect, the Contractor must be licensed or registered, and submit a statement or other evidence in the form prescribed by law, giving number, date, and/or expiration date of his License.

G. PERMITS:
1. **The Contractor shall procure and pay for all permits; inspections, licenses, and approvals necessary for the execution of is contract including, but not limited to, the following**:
    a. Trench/Street Opening Permits and Fees for work in the Town and County R.O.W.'s.
    b. Excavation Permit
    c. Soil & Erosion Control Permit
    d. Rock Hammering or Blasting Permits, if permitted by Local Jurisdiction
    e. Stormwater Permit
    f. Electrical Permit and/or Inspections
    g. Fire Permit
    h. Plumbing Permit
    i. Sign Permits

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END OF SECTION

SECTION 014216
DEFINITIONS

PART 1 GENERAL

1.01 SUMMARY

A. This section supplements the definitions contained in the General Conditions.

B. Other definitions are included in individual specification sections.

1.02 DEFINITIONS

A. Allowance: A sum of money set aside in the Contract for items which have not been selected and specified in the Contract Documents. See Section 012100 - Allowances.

B. Approved: When used in conjunction with the Architect's action on the Contractor or other Prime Contractor submittals, applications, and requests, is limited to the Architect's duties and responsibilities as stated in the Conditions of the Contract. See AIA A201, 3.12.8.

C. Basis of Design (BOD): Products Specified by Basis of Design (BOD) with additional naming of other accepted Manufacturers (as specified but indicating based on specific design criteria). Design changes required by Professional(s) of Record and/or material quantity or material size requirements that stem from submittal and use of a Manufacturer other than the BOD will require the Contractor to bear the cost of payments by the Owner to the responsible Professional(s) of Record for any related design changes as well as contractor-required additional material/labor fees stemming from this deviation from the BOD. A cost or time change to the Contract may **NOT** result.

D. Building Perimeter: includes extent of all foundations including the apron foundations and other similar foundations for stoops.

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

F. EFS: exterior finish system(s)

G. EIFS: exterior insulation and finish system(s)

H. Equal: Like in quality, nature or status and consistent with the design intent. A material or product deemed “equal” may be accepted by the Architect in place of the specified material or product. See also Section 016000 - Product Requirements. A cost or time change to the Contract may **NOT** result.

I. Equivalent: Something that performs substantially the same as the specified item in substantially the same way and is consistent with the design intent. A material or product deemed “equivalent” by the Architect may be accepted as a substitution for a specified material or product. A cost or time change to the Contract may **NOT** result. See also Section 016000 - Product Requirements.

J. Fire Resistance Rating: Time rating (in hours) in accordance with Underwriters Laboratories Fire Resistance Directory listings.

K. Furnish: Supply and deliver to the Project Site, ready for unloading, unpacking, assembly, installation, and similar operations for a complete system.

L. Indicated: Referring to graphic representations, notes, or schedules on the Drawings, or other paragraphs or Schedules in the Specifications, and similar requirements in the Contract Documents. Terms such as "shown," "noted," "scheduled," and "specified" are used to help the reader locate the reference. Location is not limited.

M. Install: To unpack, assemble, erect, apply, place, finish, cure, protect, clean, start up, and make ready for use. Actions at the Project Site including the actual unloading, unpacking, assembly, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations for a complete system.

N. Installer: An installer is the Contractor or other Prime Contractor or another entity engaged by the Contractor or other Prime Contractor's, either as an employee, subcontractor, or contractor of lower tier, to perform a particular construction activity, including installation, erection, application, or similar operations. Installers are required to be experienced in the operations they are engaged to perform.
   1. The term "experienced," when used with the term "installer," means **having a minimum of 5 previous projects similar in size and scope to this Project**, being familiar with the special requirements indicated, and having complied with requirements of authorities having jurisdiction.
   2. Trades: Using terms 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 tradespersons of the corresponding generic name.
   3. Assigning Specialists: Certain Sections of the Specifications require that specific construction activities shall be performed by specialists who are recognized experts in those operations. The specialists must be engaged for those activities, and their assignments are requirements over which the Contractor has no option. However, the ultimate responsibility for fulfilling contract requirements remains with the Contractor.
      a. This requirement shall not be interpreted to conflict with enforcing building codes and similar regulations governing the Work. It is also not intended to interfere with local trade-union jurisdictional settlements and similar conventions.

O. Permanently Enclosed: all exterior walls and roofing are installed and flashed, all openings to the exterior are either closed in with the permanent installation or with an adequate insulated temporary enclosure which can easily be maintained by the GC. This requirement may be assessed by the Architect for Phased projects.

P. Product: Material, machinery, components, equipment, fixtures, and systems forming the work result. Not materials or equipment used for preparation, fabrication, conveying, or erection and not incorporated into the work result. Products may be new, never before used, or re-used materials or equipment.

Q. Project Manual: The book-sized volume that includes the procurement requirements (if any), the contracting requirements, and the specifications.

R. Project Site: the space available to the Contractor for performing construction activities, either exclusively or in conjunction, with others performing other work as part of the Project. The extent of the Project Site is shown on the Drawings and may or may not be identical with the description of the land on which the Project is to be built.

S. Provide: To furnish and install, complete and ready for intended use.

T. Regulations: Includes laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, as well as rules, conventions, and agreements within the construction industry that control performance of the Work.

U. Similar: A designation or note shown as “sim.” that indicates other areas may have the same basic properties of material size, etc. with some small changes.

V. Substitution: An accepted equivalent product or material that is used in place of the specified product or material. “Substitutions” must be reviewed by the Architect in advance of standard submittal process. See also Section 016000 - Product Requirements. A cost or time change to the Contract may **NOT** result.

W. Supply: Same as Furnish.

X. TAFS: textured acrylic finish system(s)

Y. Testing Agency: an independent entity engaged to perform specific inspections or tests, either at the Project Site or elsewhere, and to report on and, if required, to interpret results of those inspections or tests.

Z. The words “Specification” and “Project Manual” are interchangeable, both referring to this document.

AA. Typical: A designation or note shown as “type” that indicates the included description of materials, sizes, etc. applies to all like circumstances, unless noted otherwise.

BB. Work Separation between Building and Site: minimum 5 feet outside building perimeter.

1.03 INDUSTRY STANDARDS

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

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

C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.
   1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

D. Abbreviations and Acronyms for Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the organizations responsible for the standards and regulations.

1.04 ABBREVIATIONS AND ACRONYMS

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

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 014533
CODE-REQUIRED SPECIAL INSPECTIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Code-required special inspections.

B. Submittals.

C. Manufacturers' field services.

D. Fabricators' field services.

1.02 RELATED REQUIREMENTS

A. Document 003132 - Geotechnical Data: Soil investigation data.

B. Section 013000 - Administrative Requirements: Submittal procedures.

C. Section 014000 - Quality Requirements: Other testing and inspection services.

D. Section 016000 - Product Requirements: Requirements for material and product quality.

E. Section 096700 - Fluid-Applied Flooring

1.03 DEFINITIONS

A. Code or Building Code: 2020 Edition of the Building Code of New York State and, more specifically, Chapter 17 - Structural Tests and Inspections, of same.

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. International Accreditation Service, Inc. (IAS).

D. National Institute of Standards and Technology (NIST).

E. 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 2014 (Errata 2018).

B. TMS 402/602 - Building Code Requirements and Specification for Masonry Structures 2016.

C. AISC 341 - Seismic Provisions for Structural Steel Buildings 2016 (Revised 2018).

D. AISC 360 - Specification for Structural Steel Buildings 2016.

E. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures Most Recent Edition Cited by Referring Code or Reference Standard.

F. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement 2020.

G. ASTM C31/C31M - Standard Practice for Making and Curing Concrete Test Specimens in the Field 2019a.

H. ASTM C172/C172M - Standard Practice for Sampling Freshly Mixed Concrete 2017.

I. 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 2019.

J. ASTM E329 - Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection 2020.

K. ASTM E543 - Standard Specification for Agencies Performing Nondestructive Testing 2015.

L. ASTM F2170 - Standard Test Method for Determning Relative Humidity in Concrete Floor Slabs Using in situ Probes; 2011

M. AWS D1.1/D1.1M - Structural Welding Code - Steel 2020.

N. AWS D1.3/D1.3M - Structural Welding Code - Sheet Steel 2018.

O. IAS AC89 - Accreditation Criteria for Testing Laboratories 2018.

P. IAS AC291 - Accreditation Criteria for Special Inspection Agencies 2017.

Q. ICC (IBC) - International Building Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.05 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for 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 licensed in New York and responsible officer.
   2. Submit the names and qualifications of each of the individual inspectors and technicians who will be performing inspections or tests.
   3. 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.
   4. Submit certification that Special Inspection Agency is acceptable to AHJ.
   5. Submit documentation that Special Inspection Agency is accredited by IAS according to IAS AC291.

6. Submit documentation disclosing any past or present business relationship or potential conflict of interest with the Contractor or any of the Subcontractors whose work will be inspected or tested.

C. 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 licensed in New York and responsible officer.
   2. Submit the names and qualifications of each of the individual inspectors and technicians who will be performing inspections or tests.
   3. 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.
   4. Submit certification that Testing Agency is acceptable to AHJ.
   5. Submit documentation that Testing Agency is accredited by IAS according to IAS AC89.
   6. Submit documentation disclosing any past or present business relationship or potential conflict of interest with the Contractor or any of the Subcontractors whose work will be inspected or tested.

D. Manufacturer's Qualification Statement: Manufacturer shall submit documentation of manufacturing capability and quality control procedures. Include documentation of AHJ approval.

E. Fabricator's Qualification Statement: Fabricator shall submit documentation of fabrication facilities and methods as well as quality control procedures. Include documentation of AHJ approval.

F. Special Inspection Reports: After each special inspection, Special Inspector shall promptly submit two copies of report; one to Architect via email 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 or deviation from Contract Documents.
      k. Photographic or drawn graphic supplements for further clarification.
      l. Pertinent discoveries.
      m. When requested by Architect, provide interpretation of results.
   2. Interim Reports: Submit at the end of each week. Include all test and inspection reports received that week.
   3. Final Special Inspection Report: Document special inspections and correction of discrepancies prior to the start of the work.
      a. Submit prior to issuance of a Certificate of Use and Occupancy.
      b. Certify that all required inspections have been performed.
      c. Itemize any discrepancies that were not corrected or resolved.

G. Fabricator Special Inspection Reports: After each special inspection of fabricated items at the Fabricator's facility, Special Inspector shall promptly submit copies of report; one to Architect via email and one to AHJ, as required.
   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 fabricated item and specification section.
f. Location in the Project.
g. Results of special inspection.
h. Verification of fabrication and quality control procedures.
i. Conformance with or deviation from Contract Documents.
j. Conformance to referenced standard(s), including list of applicable standard.

H. Test Reports: After each test or inspection, promptly submit copies of report; one to Architect via email and one to AHJ, as required.
1. Include:
a. Date issued.
b. Project title and number.
c. Name of inspector.
d. Date and time of sampling or inspection.
e. Identification of product and specifications section.
f. Location in the Project.
g. Type of test or inspection.
h. Date of test or inspection.
i. Results of test or inspection.
j. Conformance with or deviation from Contract Documents.
k. Photographic or drawn graphic supplements for further clarification.
l. Pertinent discoveries.
m. When requested by Architect, provide interpretation of results.

I. Certificates: When specified in individual special inspection requirements, Special Inspector shall submit certification by the fabricator and installation subcontractor to Architect and AHJ, in quantities specified for Product Data.
1. Indicate material or product complies with or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
2. Certificates may be recent or previous test results on material or product, but must be acceptable to Architect and AHJ.

J. Manufacturer's Field Reports: Submit reports to Architect and AHJ.
1. Submit report within 5 days of observation to Architect for information.
2. Submit for information for the limited purpose of assessing compliance with information given and the design concept expressed in the contract documents.

K. Fabricator's Field Reports: Submit reports to Architect and AHJ.
1. Submit report within 5 days of observation to Architect for information.
2. Submit for information for the limited purpose of assessing compliance with information given and the design concept expressed in the contract documents.

L. Relative Humidity Testing in Concrete Floor Slabs
1. Submit report within 5 days of final moisture relative humidity results to Architect for information.
2. **Provide ASTM F2170 required documentation including a plan mark-up of locations of all probes and their final test result values.**

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. The Special Inspection Agency may employ and pay for services of an independent testing agency to perform testing and sampling associated with special inspections and required by the building code.

C. Employment of agency in no way relieves Contractor of obligation to perform work in accordance with requirements of Contract Documents.

1.07 TESTING AND INSPECTION AGENCIES

A. Owner or Architect may employ services of an independent testing agency to perform additional testing and sampling associated with special inspections but not 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.

1.08 QUALITY ASSURANCE

A. Complete Special Inspections and Structural Testing in accordance with Chapter 17 of the Building Code.

B. The Special Inspection and Structural Testing program is a Quality Assurance program intended to ensure that the work is performed in accordance with the Contract Documents.

C. This specification section is intended to inform the Contractor of the Owner's quality assurance program and the extent of the Contractor's responsibilities. It is also intended to notify the Special Inspector, Testing Agency, and other Agents of the Special Inspector of their requirements and responsibilities.

D. Special Inspections shall be performed by qualified personnel, as outlined in Chapter 17 of the Building Code, with the appropriate training and certifications indicated in the Special Inspector Qualifications Schedule attached at the end of this section.

E. Special Inspection Agency Qualifications:
   1. Independent firm specializing in performing testing and inspections of the type specified in this section.
   2. Accredited by IAS according to IAS AC291.
   3. Special Inspector: Professional Engineer, licensed in New York, and/or an individual certified in a particular area of expertise, described in Part 3, who is approved by the Structural Engineer of Record (SER) and the local Building Official (AHJ).

F. Testing Agency Qualifications:
   1. Independent firm specializing in performing testing and inspections of the type specified in this section.
   2. Accredited by IAS according to IAS AC89.
   3. Approved by the Structural Engineer of Record (SER) and the local Buiding Official (AHJ).
   4. Maintain a full time licensed Professional Engineer in New York who shall certify all test reports. The Engineer shall be responsible for the training of the testing technicians and shall be in responsible charge of the field and laboratory testing operations.

G. Copies of Documents at Project Site: Maintain at the project site a copy of each referenced document.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 SCHEDULE OF SPECIAL INSPECTIONS, GENERAL

A. Required inspections and tests are as scheduled on the structural drawings. Review other specification sections for additional items required to be inspected and tested.

B. 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.

3.02 SPECIAL INSPECTIONS FOR STEEL CONSTRUCTION

A. Inspector Qualifications: Agent No. 4, unless otherwise indicated; Agent No. 3 or 4 allowed for fabricator inspections.

B. Fabricator Inspection:
   1. Verify that fabricator maintains fabrication and quality control procedures.
   2. Visually inspect shop welds prior to shipping of fabricated items.

C. High-Strength Bolt, Nut and Washer Material:
   1. Verify identification markings comply with ASTM standards specified in the approved contract and to AISC 360, Section A3.3; periodic.
   2. Submit manufacturer's certificates of compliance; periodic.

D. High-Strength Bolting Installation: Verify items listed below comply with AISC 360, Section M2.5.
   1. Snug tight joints; periodic.
   2. Pretensioned and slip-critical joints with matchmarking, twist-off bolt or direct tension indicator method of installation; periodic.
   3. Pretensioned and slip-critical joints without matchmarking or calibrated wrench method of installation; continuous.
   4. Bearing type connections; verify connected parts have been drawn together; periodic.
   5. Slip-Critical Connections:
      a. Observe all pre-installation testing and calibration procedures.
      b. Periodic inspection required when turn-of-nut method with match-marking direct tension indicator method or alternate design fastener method are used.
      c. Continuous inspection required when calibrated wrench method or turn-of-nut method without match marking is used.

E. Structural Steel and Cold Formed Steel Deck Material:
   1. Structural Steel: Verify identification markings conform to AISC 303; periodic.

2. Other Steel: Verify identification markings comply with ASTM standards specified in the approved contract documents; periodic.
3. Submit manufacturer's certificates of compliance and test reports; periodic.

F. Welding:
1. Inspector Qualifications: Agent No. 3.
2. Structural Steel and Cold Formed Steel Deck:
   a. Complete and partial joint penetration groove welds: Verify compliance with AWS D1.1; continuous.
   b. Multipass fillet welds: Verify compliance with AWS D1.1; continuous.
   c. Single pass fillet welds less than 5/16 inch wide: Verify compliance with AWS D1.1; 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; continuous.
   f. Floor and roof deck welds: Verify compliance with AWS D1.3; periodic.
3. 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.

G. 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.

3.03 SPECIAL INSPECTIONS FOR CONCRETE CONSTRUCTION

A. Inspector Qualifications: Agent No. 5, unless otherwise indicated.

B. Reinforcing Steel, Including Prestressing of Tendons and Placement: Verify compliance with approved contract documents and ACI 318; periodic.
1. Include verification of placement tolerances, splicing procedures, size and grade, stability (chairs and spacers) and cleanliness.

C. Reinforcing Steel Welding: Verify compliance with AWS D1.4/D1.4M and ACI 318; periodic.

D. Bolts Installed in Concrete: Where allowable loads have been increased or where strength design is used, verify compliance with approved contract documents and ACI 318, prior to and during placement of concrete; continuous.

E. Anchors Installed in Hardened Concrete: Verify compliance with ACI 318; periodic.

F. Design Mix: Verify plastic concrete complies with the design mix in approved contract documents and with ACI 318; periodic.

G. 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 and record the following, continuous:
1. Slump; ASTM C143/C143 M; one test at point of Placement test for each concrete truck load; perform additional tests when concrete consistency appears to change.

2. Air content; ASTM C231, pressure method, for normal-weight concrete; one test for each concrete truck load.
3. Temperature of concrete; ASTM C1064/C1064 M; one test for each concrete truck load.

H. Specified Curing Temperature and Techniques: Verify compliance with approved contract documents and ACI 318; periodic.

I. Concrete Strength in Situ: Verify concrete strength complies with approved contract documents and ACI 318, for the following.
1. Compression Test Specimens: ASTM C31/C31 M; cast and laboratory cure five (5) standard cylinder specimens for each 50 cubic yards (or fraction thereof) of concrete placed.
2. Compressive-Strength Tests: ASTM C39/C39 M; test one set of two (2) laboratory-cured specimens in seven (7) days and one set of two (2) laboratory-cured specimens at twenty-eight (28) days.
   a. Retain one cylinder for testing as directed by the Special Inspector.
   b. A compressive-strength test shall be the average compressive strength from a set of two (2) specimens obtained from the same composite sample and tested at age indicated.

J. Formwork Shape, Location and Dimensions: Verify compliance with approved contract documents and ACI 318; periodic.

K. Materials: If the Contractor cannot provide sufficient data or documentary evidence that concrete materials comply with the quality standards of ACI 318, the AHJ will require that the Special Inspector verify compliance with the appropriate standards and criteria in ACI 318, Chapter 3.

3.04 SPECIAL INSPECTIONS FOR MASONRY CONSTRUCTION

A. Inspector Qualifications: Agent No. 5, unless otherwise indicated.

B. Masonry Structures Subject to Special Inspection:
1. Empirically designed masonry, glass unit masonry and masonry veneer in structures designated as "essential facilities".
2. Engineered masonry in structures classified as "low hazard..." and "substantial hazard to human life in the event of failure".

C. Verify each item below complies with approved contract documents and the applicable articles of TMS 402/602.
1. Inspections and Approvals:
   a. Verify compliance with the required inspection provisions of the approved contract documents; periodic.
   b. Verify approval of submittals required by contract documents; periodic.
2. Compressive Strength of Masonry: Verify compressive strength of masonry units prior to start of construction and upon completion of each 5,000 square feet increment of masonry erected during construction; periodic.
3. Preblended Mortar and Grout: Verify proportions of materials upon delivery to site; periodic; one (1) set of tests for each 5,000 square feet increment of masonry or portion thereof.
4. Slump Flow and Visual Stability Index (VSI): Verify compliance as self consolidating grout arrives on site; continuous.
5. Joints and Accessories: When masonry construction begins, verify:
   a. Proportions of site prepared mortar; periodic.

b. Construction of mortar joints; periodic.
c. Location of reinforcement, connectors, prestressing tendons, anchorages, etc; periodic.

6. Structural Elements, Joints, Anchors, Protection: During masonry construction, verify:
   a. Proportions of site prepared mortar; periodic.
   b. Placement of masonry units and construction of mortar joints; periodic.
   c. Placement of reinforcement, connectors, prestressing tendons, anchorages, etc.; periodic.
   d. Grout space prior to grouting; continuous.
   e. Placement of grout; continuous.
   f. Size and location of structural elements; periodic.
   g. Type, size and location of anchors, including anchorage of masonry to structural members, frames or other construction; periodic.
   h. Size, grade and type of reinforcement, anchor bolts and prestressing tendons and anchorages; periodic.
   i. Welding of reinforcing bars; continuous.
   j. Preparation, construction and protection of masonry against hot weather above 90 degrees F and cold weather below 40 degrees F; periodic.
7. Grouting Preparation: Prior to grouting, verify:
   a. Grout space is clean; periodic.
   b. Correct placement of reinforcing, connectors, prestressing tendons and anchorages; periodic.
   c. Correctly proportioned site prepared grouts and prestressing grout for bonded tendons; periodic.
   d. Correctly constructed mortar joints; periodic.
8. Preparation of Grout Specimens, Mortar Specimens and Prisms: Observe preparation of specimens; periodic.
   a. One (1) set of tests for each 5,000 square feet of masonry or portion thereof.
   b. Provide ASTM C1314 prism testing at seven (7) days and twenty-eight (28) days for each type of construction provided.
9. Water Protection: Verify protection of masonry for temperatures below 40 Degrees F and above 90 Degrees F.

D. Engineered Masonry in Buildings Designated as "Essential Facilities": Verify compliance of each item below with approved contract documents and the applicable articles of TMS 402/602.
1. Inspections and Approvals:
   a. Verify compliance with the required inspection provisions of the approved contract documents; periodic.
   b. Verify approval of submittals required by contract documents; periodic.
2. Compressive Strength of Masonry: Verify compressive strength of masonry units prior to start of construction and upon completion of each 5,000 square feet increment of masonry erected during construction; periodic.
3. Preblended Mortar and Grout: Verify proportions of materials upon delivery to site; periodic; one (1) set of tests for each 5,000 square feet increment of masonry or portion thereof
4. Engineered Elements, Joints, Anchors, Grouting, Protection: Verify compliance of each item below with approved contract documents and referenced standards.
   a. Proportions of site prepared mortar; periodic.
   b. Placement of masonry units and construction of mortar joints; periodic.
   c. Placement of reinforcement, connectors, prestressing tendons, anchorages, etc.; periodic.
   d. Grout space prior to grouting; continuous.
   e. Placement of grout; continuous.

f. Size and location of structural elements; periodic.
g. Type, size and location of anchors, including anchorage of masonry to structural members, frames or other construction; continuous.
h. Size, grade and type of reinforcement, anchor bolts and prestressing tendons and anchorages; periodic.
i. Welding of reinforcing bars; continuous.
j. Preparation, construction and protection of masonry against hot weather above 90 degrees F and cold weather below 40 degrees F; periodic.

5. Preparation of Grout Specimens, Mortar Specimens and Prisms: Observe preparation of specimens; continuous.
   a. One (1) set of tests for each 5,000 square feet of masonry or portion thereof.
   b. Provide ASTM C1314 prism testing at seven (7) days and twenty-eight (28) days for each type of construction provided.
6. Weather Protection: Verify protection of masonry for temperatures below 40 Degrees F and above 90 Degrees F.

3.05 SPECIAL INSPECTIONS FOR SOILS

A. Inspector Qualifications: Agent No. 7

B. 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.
   a. At footing subgrade, perform at lease one test of each soil stratum to verify design bearing capacities. Subsequent verification and approval of other footing subgrades may be based on a visual comparison of subgrade with tested subgrade when approved by the Special Inspector.
2. Design depth of excavations and suitability of material at bottom of excavations; periodic.
   a. Inspect when excavations have reached required elevation(s).
3. Inspect Subgrades when excavations have reached required elevation.
4. Materials, densities, lift thicknesses; placement and compaction of backfill; continuous.
   a. Compaction of soils in place according to ASTM D1556, ASTM D2167, ASTM D 2922, and ASTM D2937, as applicable. Perform tests at the following locations and frequencies:
      1) Building Slab Areas: At each compacted backfill layer, at least 1 test for 2000 sq. ft. or less of building slab, but in no case fewer than three tests.
      2) Foundation Wall Backfill: At each compacted backfill layer, at least 1 test for 50 feet or less of wall length, but no fewer than 2 tests.
      3) Trench Backfill: At each compacted compacted initial and final backfill layer, at least 1 test for each 100 feet or less of trench length, but no fewer than 2 tests.
5. Subgrade, prior to placement of compacted fill; periodic.

C. Testing: Classify and test excavated material; periodic.

3.06 SPECIAL INSPECTIONS FOR MASTIC AND INTUMESCENT FIRE RESISTANT COATINGS

A. Inspector Qualifications: Agent No. 6

B. Verify mastic and intumescent fire resistant coatings comply with AWCI 117 and the fire resistance rating indicated on approved contract documents.

3.07 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.

3.08 SPECIAL INSPECTIONS FOR SEISMIC RESISTANCE

A. Structural Steel: Comply with the quality assurance plan requirements of AISC 341.

B. Cold Formed Steel Light Frame Construction:
   1. Field welding; periodic.
   2. Screw attachment, bolting, anchoring and other fastening of components within the main seismic force-resisting system; periodic.

C. Architectural Components: Erection and fastening of components below; periodic.
   1. Exterior cladding.
   2. Interior and exterior veneer.
   3. Interior and exterior non-loadbearing walls and partitions.

D. Mechanical and Electrical Components:
   1. Anchorage of electric equipment required for emergency or standby power systems; periodic.

E. Designated Seismic System Verification: Verify label, anchorage or mounting complies with certificate of compliance provided by manufacturer or fabricator.

F. Structural Testing for Seismic Resistance:
   1. Concrete reinforcement: Comply with ACI 318.
      a. Materials Obtain mill certificates demonstrating compliance with ASTM A615/A615M; periodic.
      b. Welding: Perform chemical tests complying with ACI 318 to determine weldability; periodic.
   2. Structural Steel: Comply with the quality assurance requirements of AISC 341.
   3. Non-Structural Components:
      a. General Design Requirements: Obtain manufacturer certification of compliance with requirements of ASCE 7, Section 13.2.1; periodic.
      b. Designated Seismic Force-Resisting Non-Structural System Components: Obtain manufacturer certification of compliance with ASCE 7, Section 13.2.2; periodic.

G. Structural Observations for Seismic Resistance: Visually observe structural system for general compliance with the approved contract documents; periodic.

3.09 SPECIAL INSPECTIONS FOR WIND RESISTANCE

A. Structural Observations for Wind Resistance: Visually observe structural system for general compliance with the approved contract documents; periodic.

3.10 OTHER SPECIAL INSPECTIONS

A. Provide for special inspection of work that, in the opinion of the AHJ, is unusual in nature.

B. For the purposes of this section, work unusual in nature includes, but is not limited to:
   1. Construction materials and systems that are alternatives to materials and systems prescribed by the building code.
   2. Unusual design applications of materials described in the building code.
   3. Materials and systems required to be installed in accordance with the manufacturer's instructions when said instructions prescribe requirements not included in the building code or in standards referenced by the building code.

C. Alternative Test Procedures: Where approved rules and standards do not exist, test materials and assemblies as required by AHJ or provide AHJ with documentation of quality and manner in which those materials and assemblies are used.

D. Load Tests:
   1. Proposed Construction and Construction in Progress: Where required by code, conduct tests listed below.
      a. Load test procedures specified in code; periodic.
      b. Exterior Window and Door Assemblies: Wind load design pressure test; periodic.
   2. Completed Construction: Where required by code, conduct tests listed below.
      a. Load test procedures specified in code; periodic.

3.11 SPECIAL INSPECTION AGENCY DUTIES AND RESPONSIBILITIES

A. Special Inspection Agency shall:
   1. Verify samples submitted by Contractor comply with the referenced standards and the approved contract documents.
   2. Provide qualified personnel at site. Cooperate with Architect and Contractor in performance of services.
   3. Perform specified sampling and testing of products in accordance with specified reference standards.
   4. Ascertain compliance of materials and products with requirements of Contract Documents.
   5. Promptly notify Architect and Contractor of observed irregularities or non-compliance of work or products.
   6. Perform additional tests and inspections required by Architect.
   7. Attend preconstruction meetings, preinstallation conferences, and progress meetings .
   8. Submit reports of all tests or inspections specified.

B. Limits on Special Inspection Agency Authority:
   1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
   2. Agency may not approve or accept any portion of the work.
   3. Agency may not assume any duties of Contractor.
   4. Agency has no authority to stop the work.

C. Re-testing required because of non-compliance with specified requirements shall be performed by the same agency on instructions by Architect.

D. Re-testing required because of non-compliance with specified requirements shall be paid for by Contractor.

3.12 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. Review the Statement of Special Inspections.
3. Coordinate and schedule inspections and tests.
4. Cooperate with agency and laboratory personnel so Special Inspections and Testing can be performed without hindrance; provide access to the work, to manufacturers' facilities, and to fabricators' facilities.
5. 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.
6. Notify 24 hours, minimum, prior to expected time for operations requiring testing or inspection services. Uninspected work that required inspection may be rejected solely on that basis.
7. Maintain at the project site the latest set of construction drawings, field sketches, approved shop drawings, and specifications for use by the inspectors and testing technicians.
8. Arrange with Owner's agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
9. Pay costs of any retesting or re-inspection of work which fails to comply with the requirements of the Contract Documents.
10. The Special Inspection program shall in no way relieve the Contractor of his obligation to perform work in accordance with the Contract Documents or from implementing an effective Quality Control program. Work scheduled for and subjected to Special Inspections and Testing shall first be reviewed by the Contractor’s quality control personnel.
11. The Contractor shall be solely responsible for construction site safety.

B. Contractor Responsibilities, Seismic Force-Resisting Systems: Submit written statement of responsibility for each item listed to AHJ and Owner prior to starting work. Statement of responsibility shall acknowledge awareness of special construction requirements and other requirements listed.

3.13 MANUFACTURERS' AND FABRICATORS' FIELD SERVICES

A. When specified in individual specification sections, require material suppliers, assembly fabricators, or product manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, to test, adjust, and balance equipmentand service connections of installations as applicable, and to initiate instructions when necessary.

B. Submit qualifications of observer to Architect 30 days in advance of required observations.
1. Observer subject to approval of Architect.

C. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

3.14 ATTACHMENTS

A. Special Inspector Qualifications Schedule

B. Statement of Special Inspections

SPECIAL INSPECTOR QUALIFICATIONS

Agent No.	Category	Code Reference	Minimum Qualifications
1	Reinforced Concrete	1704.4	1. Current ICC Reinforced Concrete Special Inspector or ACI Concrete Construction Inspector 2. Concrete field testing can be ACI Concrete Field Testing Technician with Grade 1 Certification. 3. Engineer-in-Training (EIT) with relevant experience. 4. New York State Licensed Professional Engineer (P.E.) with relevant experience,
2	Pre-stressed Concrete	Table 1704.4	Pretension Tendons: 1. Current ICC Reinforced Concrete certification or ACI Concrete Field Testing Technician with one year relevant experience. 2. EIT with relevant experience. 3. P.E. with relevant experience.
3	Welding	1704.3; Table 1704.3, Item 5; Table 1704.4, Item 2; 1707.2; 2208	1. Current AWS Certified Welding Inspector 2. Current ICC Structural Steel and Welding certificate plus one year relevant experience. 3. Current Level III certification from the American Society of Nondestructive Testing (NDT).
4	High-Strength Bolting & Steel Frame Inspection	1704.3.3; 1704.3	1. Current ICC Structural Steel and 2. Welding certificate and one year of relevant experience. 3. EIT with relevant experience. 4. P.E. with relevant experience.
5	Masonry	1704.5; Table 1704.5.1; Table 1704.5.3	1. Current ICC Structural Masonry certificate and one year of relevant experience. 2. EIT with relevant experience.

			3. P.E. with relevant experience.
6	Sprayed Fire Resistant Materials	1704.11	1. Current ICC Spray-Applied Fireproofing certificate and one year relevant experience. 2. EIT with relevant experience. 3. P.E. with relevant experience.
7	Excavation and Filling; Verification of Soils; Piling & Drilled Piers; Modular Retaining Walls	1704.7; 1704.8; 1704.9; 1704.13	1. Current Level II certificate in geotechnical engineering technology/construction from the National Institute for Certification in Engineering Technologies (NICET). 2. EIT with relevant experience. 3. P.E. with relevant experience.
8	Inspection of Fabricators	1704.2	1. Precast: Current ICC Reinforced Concrete plus one year relevant experience. 2. Bar Joist: See welding requirements. 3. Metal Building: See welding requirements. 4. Structural Steel: See welding requirements.
11	Smoke Control	1704.14	1. See Requirements in BCSNY Section 1704.14.2. 2. The RDP responsible for design
12	Seismic Resistance	1707; 1708	1. See the applicable categories in this table.

STATEMENT OF SPECIAL INSPECTIONS

Project: Putnam Valley Fire Station #1

Location: Oscawana Lake Road, Putnam Valley, NY 10579

Architect of Record: Mitchell Associates Architects

Structural Engineer of Record: Craig Maloney, P.E.

This Statement of Special Inspections is submitted as a condition for permit issuance in accordance with the Special Inspection requirements of the Building Code. It includes the Schedule of Special Inspection Services applicable to this project as well as the name of the Special Inspector and the identity of other approved agencies intended to be retained for conducting these inspections.

The Special Inspector shall keep records of all inspections and shall furnish inspection reports to the Building Official, Structural Engineer and Architect of Record. 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, Structural Engineer and Architect of Record. The Special Inspection program does not relieve the Contractor of his or her responsibilities.

Interim reports shall be submitted to the Building Official, Owner, Structural Engineer and Architect of Record.

A Final Report of Special Inspections documenting completion of all required Special Inspections 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.

Prepared by: _____ (Type or print name)	
_____ Signature Date	Design Professional's Seal
Owner's Authorization:	Building Official's Acceptance:
_____ Signature Date	_____ Signature Date

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END OF SECTION

SECTION 015000
TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Temporary telecommunications services.

B. Temporary sanitary facilities.

C. Temporary Controls: Barriers, enclosures, and fencing.

D. Security requirements.

E. Water and erosion control.

F. Waste removal facilities and services.

G. Project identification sign.

H. Field offices.

1.02 RELATED REQUIREMENTS

A. Section 015100 - Temporary Utilities.

B. Section 015213 - Field Offices and Sheds.

C. Section 015500 - Vehicular Access and Parking.

D. Section 015713 - Temporary Erosion and Sediment Control.

E. Section 015813 - Temporary Project Signage.

1.03 REFERENCE STANDARDS

A. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2020.

B. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements 2009 (Reapproved 2016).

1.04 REFERENCES

A. NFPA 10 - Standard for Portable Fire Extinguishers

B. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2013

1.05 SUMMARY

A. This Section specifies requirements for temporary services and facilities, including utilities construction and support facilities, security and protection.

B. Temporary utilities required, but may not be limited to, include:
   1. Water and erosion control.
   2. Temporary electric power and light.
   3. Telephone facsimile and answering machine service as required by each Owner and Architect. General Construction Contractor (GCC) is responsible to coordinate their phone and fax service if necessary. All costs associated with phone and fax to be borne by the GCC. The Owner will not furnish such services.

C. Temporary construction and support facilities required, but may not be limited to, include:
   1. Temporary heat.
   2. Field offices and storage sheds.
   3. Sanitary facilities, including drinking water and wash facilities.
   4. Temporary enclosures.
   5. Temporary stairs and connector corridors.
   6. Waste disposal services.
   7. Construction aids and miscellaneous services and facilities.
   8. Parking.

D. Security and protection facilities required include, but are not limited to:
   1. Temporary fire protection.
   2. Barricades, warning signs, lights.
   3. Construction fencing and gates.
   4. Environmental protection.
   5. Traffic controls.

1.06 SUBMITTALS

A. Temporary Utilities: Submit to the Architect two reports of tests, inspections, meter readings and similar procedures performed on temporary utilities.

B. Implementation and Termination Schedule: Submit a schedule indicating implementation and termination of each temporary utility within fifteen (15) days of the date established for commencement of work.

C. Collection and disposal of waste plan.

1.07 QUALITY ASSURANCE

A. Regulations: Comply with industry standards and applicable laws and regulations of authorities having jurisdiction including, but not limited to:
   1. Building Code requirements.
   2. Health and safety regulations.
   3. Utility company regulations.
   4. Police, Fire Department and Rescue Squad rules.
   5. Environmental protection regulation
   6. OSHA regulations.
   7. Transportation Authority.

B. Refer to "Guidelines for Bid Conditions for Temporary Job Utilities and Services", prepared jointly by AGC and ASC, for industry recommendations.

C. Contractor to provide for the safety of its personnel and the public.

D. Enforce strict discipline in use of temporary facilities to essential and intended uses to minimize waste and abuse.

E. Provide protection, operate temporary facilities and conduct construction in ways and by methods that comply with environmental regulations, and minimize the possibility that air, waterways and subsoil might be contaminated, polluted, or that other undesirable effects might result.

F. Avoid use of tools and equipment, which produce harmful noise.

G. Restrict use of noise making tools and equipment during times that will minimize complaints from persons or firms near the site.

1.08 FIELD CONDITIONS

A. Keep temporary services and facilities clean and neat in appearance.

B. Take necessary fire prevention measures.

C. Do not overload facilities or permit them to interfere with progress.

D. Do not allow unsanitary conditions or public nuisances to develop or persist on the site.

E. Change over from use of temporary services to permanent service at earliest feasible time or when acceptable to Owner.

F. Maintain markers for underground facilities.

G. Protect underground facilities from damage during excavation operations.

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

1.09 TEMPORARY UTILITIES - See Section 015100

1.10 TELECOMMUNICATIONS SERVICES

A. Provide, maintain, and pay for telecommunications services to field office at time of project mobilization.

B. Telecommunications services shall include:
   1. Windows-based personal computer dedicated to project telecommunications, with necessary software and laser printer.
      a. Computer shall be as follows: New, Windows-based operating software under current support by Microsoft, minimum 16.9” Screen Size Laptop with minimum 8 Gb of RAM, 256 Gb Hard Drive with USB ports (minimum of two) and WiFi/Bluetooth capabilities. The laptop shall be equipped with the complete Microsoft Outlook Suite as well as a .pdf Reader & Writer Program for viewing and marking up PDF documents.
      b. Printer/Fax Machine shall be a wireless capable, color laser printer with minimum printing/copying speed of 19 pages/minute.
   2. Telephone Land Lines: One line, minimum; one handset per line.

3. Internet Connections: Minimum of one; Cable modem or faster.
4. Email: Account/address reserved for project use.
5. Facsimile Service: Minimum of one dedicated fax machine/scanner/printer, with dedicated phone line.

1.11 TEMPORARY SANITARY FACILITIES

A. Provide and maintain required facilities and enclosures. Provide at time of project mobilization.

B. Toilets: Provide self-contained, single occupant, chemical type toilet units; comply with regulations and health codes for type, number, location, operation and maintenance of fixtures and facilities; shield toilets to ensure privacy; pit-type privies are not permitted; provide toilet tissue.
1. Locate where shown or directed by the Architect or Project Coordinator.

C. Wash Facilities: Provide wash facilities and fixtures; comply with regulations and health codes for type, number, location, operation and maintenance of fixtures and facilities; provide paper towels and similar disposable materials for each facility, as well as covered waste containers for used materials.

D. New permanent facilities may not be used during construction operations.

E. Maintain daily in clean and sanitary condition.

F. At end of construction, return facilities to same or better condition as originally found.

1.12 BARRIERS

A. Provide barriers to prevent unauthorized entry to construction areas, to prevent access to areas that could be hazardous to workers or the public, to allow for owner's use of site, to separate construction activities from Owner's activities and to protect existing facilities and adjacent properties from damage from construction operations and demolition.

B. Provide barricades and covered walkways required by governing authorities for public rights-of-way and for public access to existing building.

C. Provide protection for plants designated to remain. Replace damaged plants.

D. Provide barriers around all excavation work to prevent vehicles, people, and animals from accidentally entering the excavation. Required for entire duration of excavation. Locate to enclose sufficient area for excavation operations.

E. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

F. Traffic Controls: See Section 015500 - Vehicular Access and Parking.

1.13 FENCING

A. Construction: Commercial grade chain link fence; 11 gauge, galvanized steel, 2 inch chain link fabric; 1 1/2" I.D. galvanized steel line posts; 2 1/2" I.D. galvanized steel corner posts.

B. Provide 6 foot high fence around construction site; equip with vehicular and pedestrian gates with locks.
1. Hinge gates to swing into the site, not out into the public way.
2. Set posts in compacted mixture of gravel and earth at a depth and spacing to ensure proper operation of fencing and gates.

3. Contractor to ensure proper installation and maintenance of site fencing. Corrective measures for inadequate installation and daily maintenance to assure the entire site is secure will be at the sole expense of the Contractor.
4. Pricing shall include opaque construction screening on all portions of the fence and gates

1.14 EXTERIOR ENCLOSURES

A. Tarpaulins for Use with Exterior Enclosures: Translucent, nylon-reinforced laminated polyethylene or polyvinyl chloride fire retardant; UL labeled with flame spread rating of fifteen (15) or less.

B. Coordinate enclosures with ventilating and material drying or curing requirements to avoid dangerous conditions and effects.

1.15 INTERIOR ENCLOSURES

A. Provide temporary partitions and ceilings as indicated to separate work areas from Owner-occupied areas, to prevent penetration of dust and moisture into Owner-occupied areas, and to prevent damage to existing materials and equipment.

B. Construction: Framing and reinforced polyethylene sheet materials with closed joints and sealed edges at intersections with existing surfaces:

C. Tarpaulins for Use with Interior Enclosures: Translucent, nylon-reinforced laminated polyethylene or polyvinyl chloride fire retardant; UL labeled with flame spread rating of fifteen (15) or less.

1.16 SECURITY

A. Provide security and facilities to protect Work, materials, equipment, and Owner's operations from unauthorized entry, vandalism, or theft.
1. Contractor shall be responsible to provide secure lockup of its company-owned materials and equipment.

B. Maintain security procedures, controls, and services from start of Work until time of Owner occupancy.

C. Enforce discipline in connection with the installation and release of material from storage to minimize the opportunity for theft and vandalism.

1.17 TEMPORARY FIRE PROTECTION

A. Until fire protection needs are supplied by permanent facilities, install and maintain temporary fire protection facilities of the types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 10 and NFPA 24.

B. At the earliest feasible date in each area of the Project, complete installation of the permanent fire protection facility, including connected services, and place into operation and use. Instruct key personnel on use of facilities.

C. Locate fire extinguishers where convenient and effective for their intended purpose, but not less than one extinguisher on each floor at or near each usable stairwell.

D. Store combustible materials required for work in containers in fire-safe locations.

E. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire protection facilities, stairways and other access routes for fighting fires. Prohibit smoking in hazardous fire exposure areas.

F. Provide supervision of welding operations, combustion type temporary heating units and similar sources of fire ignition required for their work.

1.18 VEHICULAR ACCESS AND PARKING - See Section 015500

1.19 WATER AND EROSION CONTROL

A. Provide earthen embankments and similar barriers in and around excavations and sub-grade construction sufficient to prevent flooding by runoff of storm water.

B. Maintain excavations free from water, provide, operate and maintain any necessary pumping or other de-watering equipment to achieve this objective.

C. Provide hay bales, or other means of erosion control to prevent soil erosion and runoff of soil into roads, paved areas or sewers.

D. See Civil/Site Erosion Drawings and related specifications. The more stringent requirements between this Section and the Civil/Site Drawings and Specifications shall be provided.

1.20 WASTE REMOVAL

A. See Section 017419 - Construction Waste Management and Disposal, for additional requirements.

B. Provide waste removal facilities, dumpsters, and services as required to maintain the site in clean and orderly condition.

C. Submit a waste collection and disposal plan to Architect and Owners Representative for review. The plan shall include, but not be limited to: trash dumpster types and locations and similar information.

D. Locate waste removal facilities and dumpsters at designated on-site locations.

E. All Sus-Contractors are responsible for collecting waste. General Construction Contractor is responsible for disposal.
   1. Weekly clean-up and disposal is required by each Contractor for the periods which that Contractor is performing work on site, on a day selected by the GCC.
   2. Each trade will assign at least one person to the weekly clean-up. Submit the name of this person to the Clerk of the Works.
   3. Any Contractor not providing personnel for the weekly clean-up will be charged for labor provided by the Owner, at premium rates, regardless of when the work is performed, plus 15%, via a deduct contract modification.

F. Contractor shall provide containers with lids. Contractor shall remove trash from site no less than one time per week..

G. Comply with NFPA 241 for removal of combustible waste and debris. Enforce requirements strictly.

H. Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly.

I. Do not hold materials more than seven (7) days during normal weather or three (3) days when the temperature is expected to rise above 80 degrees F (27 degrees C).

J. If materials to be recycled or re-used on the project must be stored on-site, provide suitable non-combustible containers; locate containers holding flammable material outside the structure unless otherwise approved by the authorities having jurisdiction.

K. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

L. If Contractor fails or neglects to remove debris and dispose of it properly, the Contractor will be given one day to correct the problem. Architect will direct cleaning by an outside company. Costs for said cleaning company and the Architect's associated time will be backcharged to Contractor in accordance with the General Conditions of the Contract.

1.21 PROJECT SIGNS - See Section 015813

1.22 FIELD OFFICES - See Section 015213

1.23 SCAFFOLDING, LADDERS, CHUTES, and RELATED EQUIPMENT

A. Provided by General Construction Contractor.

B. Provide scaffolding, ladders, planks, chutes, and related equipment fabricated from sound "materials" and of adequate dimension for the intended use. Scaffolding or bracing shall not puncture, scar, or damage walls or other construction.

C. Exterior wall scaffolds shall be trestle or built-up type with solid platforms, tubular steel supports and guard rails.

D. Protective tarpaulins or other wind breaks shall be used whenever work is being done during cold or inclement weather.

E. Ladders shall be of sound materials and free of defects that would impair their strength.

F. Tarpaulins: Waterproof, UL labeled, fire resistant with flame spread rating of fifteen (15) or less.

1.24 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

A. Materials, equipment, and facilities that constitute temporary facilities are the property of the installing Contractor

B. Remove temporary utilities, equipment, facilities, materials, when the need for each facility has ended, when replaced by authorized use of permanent facility, or prior to Substantial Completion inspection, unless otherwise provided by the project schedule or direction from the Owner or Architect.

C. Remove underground installations in areas of work scope in their entirety. Grade site as indicated.

D. Clean and repair damage caused by installation or use of temporary work.

E. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with the temporary facility.

F. Restore new permanent facilities used during construction or prior to final occupancy to specified condition, including but not limited to the following:
   1. Replace significantly worn parts and parts that have been subject to unusual operating conditions.
   2. Replace lamps that are burned out or noticeably dimmed by substantial hours of use; replacement lamps are in addition to any extra stock lamps required by the specifications.
   3. Replace air filters and clean the inside of ductwork and housings.

PART 2 PRODUCTS

2.01 EQUIPMENT

A. General: Provide new equipment. Undamaged, previously used equipment in serviceable condition may be used if acceptable to the Architect. Provide equipment suitable for use intended.

B. Water Hoses: 3/4" heavy-duty abrasion-resistant flexible rubber; 100 ft. long; pressure rating greater than the maximum pressure of the water distribution system; adjustable shut-off nozzles at hose discharge.

C. Electrical Power Cords: Grounded extension cords; use “hard service” cords where exposed to abrasion and traffic; provide waterproof connectors to connect separate lengths of electric cords if single lengths will not reach areas where construction activities are in progress.

D. Lamps and Light Fixtures: General service incandescent lamps of wattage required for adequate illumination; guard cages or tempered glass enclosures where exposed to breakage; exterior fixtures where exposed to moisture.

E. Fire Extinguishers: Hand-carried, portable UL-rated "Class A" fire extinguishers for field offices, sheds, and similar spaces. In other locations, provide hand-carried, portable, UL-rated class "ABC" dry chemical extinguishers or a combination of extinguishers of NFPA recommended classes for the exposures.
   1. Comply with NFPA 10 and 241 for classification, extinguishing agent and size required by location and class of fire exposure.

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 015100
TEMPORARY UTILITIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Temporary Utilities: Electricity, lighting, heating, ventilation, and water.

1.02 RELATED REQUIREMENTS

A. Section 015000 - Temporary Facilities and Controls:
   1. Temporary telecommunications services for administrative purposes.
   2. Temporary sanitary facilities required by law.
   3. Other equipment related to temporary utilities.

1.03 REFERENCES

A. ANSI A10 Series - Safety Requirements for Construction and Demolition

B. NFPA 70 - National Electrical Code; 2014.

C. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2013

1.04 QUALITY ASSURANCE

A. Comply with requirements of NFPA 241, ANSI-A10, and NEC Electrical Design Library "Temporary Electrical Facilities."

B. Required Inspections: Arrange for authorities having jurisdiction to inspect and test each temporary utility before use.

1.05 SUBMITTALS

A. Temporary Utilities: Submit copies of reports of tests, inspections, meter readings and similar procedures performed on temporary utilities.

B. Implementation and Termination Schedule: Submit a schedule indicating implementation and termination of each temporary utility within fifteen (15) days of the date established for commencement of work.

1.06 TEMPORARY ELECTRICITY

A. Cost: By Contractor.

B. EC to provide weatherproof, grounded power service required from utility source.
   1. Comply with all NEMA, NEC, and UL standard and regulations for temporary electric service.
   2. Install in compliance with NFPA 70.
   3. DO NOT DISRUPT the District's need for continuous power service.

C. Provide power outlets for construction operations, with branch wiring and distribution boxes located as required. Provide flexible power cords as required.
   1. Provide NEMA polarized outlets to prevent insertion of 110-120 volt plugs into higher voltage outlets.
   2. Provide receptacle outlets equipped with ground-fault circuit interrupters, reset button and pilot light for connection of power tools and equipment.

D. Provide main service disconnect and over-current protection at convenient location and meter.

E. Provide adequate distribution equipment, wiring, and outlets to provide single phase branch circuits for power and lighting.
   1. Provide 20 ampere four-gang outlets, single phase circuits for power tools for every 2500 sq ft of active work area. Provide separate 110-120 volt, 20 ampere circuit for each outlet; maximum four outlets per circuit.
   2. Provide 20 ampere, single phase branch circuits for lighting.
   3. Circuits, including lighting, not exceeding 125 volt AC, 20 ampere rating may be nonmetallic sheathed cable where located overhead and exposed for surveillance.

1.07 TEMPORARY LIGHTING FOR CONSTRUCTION PURPOSES

A. Provided by Electrical Contractor.

B. Provide and maintain lighting for construction operationsto achieve a minimum lighting level of 2 watt/sq ft .

C. Provide and maintain 1 watt/sq ft lighting to exterior staging and storage areas after dark for security purposes.

D. Provide and maintain 0.25 watt/sq ft H.I.D. lighting to interior work areas after dark for security purposes.

E. Provide branch wiring from power source to distribution boxes with lighting conductors, pigtails, and lamps as required.

F. Maintain lighting and provide routine repairs.

G. Permanent building lighting may be utilized during construction.

1.08 TEMPORARY HEATING

A. Cost of Energy: By Contractor.

B. Provide UL listed, vented, self-contained LP gas or fuel oil heating devices and heat as needed to maintain specified conditions for construction operations.
   1. Select devices that will not have harmful effects on completed installations or elements being installed.
   2. Gasoline-burning space heaters, open flame or salamander type heating units are prohibited.

C. Maintain minimum ambient temperature of 50 degrees F in areas where construction is in progress, **unless** indicated otherwise in specifications.

D. Minimize energy consumption.

E. Leave temporary heating in place up to Substantial Completion or as approved by the Architect for removal.

F. Existing facilities shall not be used.
   1. Exercise measures to conserve energy.
   2. Enclose building prior to activating temporary heat.

G. Prior to operation of permanent equipment for temporary heating purposes, verify that installation is approved for operation, equipment is lubricated and filters are in place. Provide and pay for operation, maintenance, and regular replacement of filters and worn or consumed parts.

1.09 TEMPORARY COOLING

A. Cost of Energy: By Contractor.

B. Provide cooling devices and cooling as needed to maintain specified conditions for construction operations. Special attention shall be given to installed materials which can be damaged, warped, dampened, etc. due to humidity and/or moisture in ambient air. Cooling shall be provided to prevent such damage. Failure to adequately provide such cooling and/or humidity removal measures will result in removals and replacements as directed by the architect.

C. Maintain maximum ambient temperature of 80 degrees F in areas where construction is in progress, **unless** indicated otherwise in specifications.

D. Owner's new cooling plant may be used only if authorized in writing by the Architect.
   1. Costs for powering Owner's cooling plant prior to Substantial Completion will be the responsibility of the General Contractor. Exercise measures to conserve energy.
   2. Enclose building prior to activating temporary cooling.

E. Prior to operation of permanent equipment for temporary cooling purposes, verify that installation is approved for operation, equipment is lubricated and filters are in place. Provide and pay for operation, maintenance, and regular replacement of filters and worn or consumed parts.

1.10 TEMPORARY VENTILATION

A. Provide temporary fan units and other ventilation equipment as required to maintain clean air for construction operations.

1.11 TEMPORARY WATER SERVICE

A. Cost of Water Used until Permanent Water Service Established: By Contractor.

B. GC to Provide and maintain suitable quality water service and distribution piping of sizes and pressures adequate for construction operations at time of project mobilization.

C. Extend branch piping with outlets located so water is available by hoses with threaded connections. Provide temporary pipe insulation to prevent freezing.

D. Sterilize temporary water piping prior to use.

1.12 TEMPORARY SEWER SERVICE

A. If sewers are available, provide and maintain temporary connections to remove effluent that can be discharged lawfully. If sewers are not available or cannot be used, provide drainage ditches, dry wells, stabilization ponds and similar facilities. If neither sewers nor drainage facilities can be lawfully used for discharge of effluent, provide containers to remove and dispose of effluent off the site in a lawful manner.

B. Connect temporary sewer service to municipal system as directed by the local Department of Public Works officials.

C. Filter out excessive amounts of soil, debris, oils, and other similar contaminants that might clog sewer or pollute waterways before discharge.

D. Maintain temporary sewers and drainage facilities in a clean, sanitary condition. Following heavy use, restore normal conditions promptly.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 015213
FIELD OFFICES AND SHEDS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Temporary field office for use by Owner and Architect.

B. Temporary field offices for use of Contractor.

C. Maintenance and removal.

D. **Minimum Safety Guidelines to be the responsibility of the General Contractor to comply with OSHA and NY State COVID-19 Safety Guidelines and Requirements.**

1.02 RELATED REQUIREMENTS

A. Section 011100 - Summary: use of premises and responsibility for providing field offices.

B. Section 015000 - Temporary Facilities and Controls:
1. Temporary telecommunications services for administrative purposes.
2. Temporary sanitary facilities required by law.

C. Section 015500: Parking and access to field offices.

1.03 USE OF EXISTING FACILITIES

A. Existing facilities shall **not** be used for field offices or storage.

1.04 USE OF PERMANENT FACILITIES

A. Permanent facilities shall not be used for field offices.

PART 2 PRODUCTS

2.01 MATERIALS, EQUIPMENT, FURNISHINGS

A. Materials, Equipment, Furnishings: Serviceable, clean, functioning, new or used, adequate for required purpose.

2.02 CONSTRUCTION

A. **Size: To comply with COVID-19 safe social distancing as directed by NY State, a Double-Wide modular trailer is required for the project. A minimum dimension of 24 feet wide with a total square footage not less than 1,440 square feet is required for the duration of this project.**

B. Portable or mobile buildings, or buildings constructed with floors raised above ground, securely fixed to foundation-type CMU blocks, with steps and landings at entrance doors.

C. Construction: Structurally sound, secure, weather tight enclosures for office. Maintain during progress of Work; remove at completion of Work.

D. Temperature Transmission Resistance of Floors, Walls, and Ceilings: Compatible with occupancy requirements.

E. Restroom: **Building to be equipped with a restroom**.
   1. Acceptable Vendors:
      a. Williams Scotsman Mobile Office Trailer; www.willscot.com
      b. 360MobileOffice; www.360mobileoffice.com
      c. Cassone; www.cassone.com
      d. VestaModular; www.vestamodular.com
   2. Substitutions: See Section 016000 Product Requirements

F. Exterior Materials: Weather resistant, finished in one color.

G. Interior Materials in Offices: Sheet type materials for walls and ceilings, prefinished or painted; resilient floors and bases.

H. Lighting for Offices: 50 fc at desk top height, exterior lighting at entrance doors.

I. Fire Extinguishers: Appropriate type fire extinguisher at each office, each storage shed, and as required pursuant to local building code and NFPA standards.

2.03 ENVIRONMENTAL CONTROL

A. Heating, Cooling, and Ventilating: Automatic equipment to maintain comfort conditions.

B. **COVID-19: Contractor to provide minimum air filtration and ventilation parameters to comply with OSHA and NY State Safety Guidelines regarding COVID-19, as a minimum.**

2.04 OFFICE AND FACILITIES - CONTRACTOR'S USE

A. Size: For Contractor's needs and to provide space for project meetings.

B. Telephone: As specified in Section 015000.

C. Furnishings in Meeting Area: Conference table(s) and chairs to seat at least twelve persons; racks and files for Contract Documents, submittals, and project record documents.

D. Other Furnishings: Contractor's option.

E. Equipment: Six adjustable band protective helmets for visitors, one 10 inch outdoor weather thermometer .

F. Maintain a complete and current set of Contract Documents (including any Addenda, Change Orders, and Modifications thereto), approved shop drawings, samples, color schedules and other data pertinent to the Project.

2.05 OWNER AND ARCHITECT/ENGINEER OFFICE

A. A private room within the Contractor trailer for sole use of Owner, Project Coordinator, and Architect, with separate entrance door with new lock and two keys.

B. Area: At least 80 sq ft, with minimum dimension of 8 ft.

C. Windows: Minimum one; minimum total area of 10 percent of floor area, with operable sash and insect screens. Locate to provide views of construction area.

D. Electrical Distribution Panel: Two circuits minimum, 110 volt, 60 hz service.

E. Minimum four 110 volt duplex convenience outlets, one on each wall.

F. Telephone: As specified in Section 015000.

G. Sanitary Facilities: Use and access to a shared facility within the Construction trailer.

H. Furnishings:
1. One desk 54 by 30 inch, with three drawers.
2. One drafting table 36 by 72 inch, with one equipment drawer.
3. One metal, double-door storage cabinet under table.
4. Plan rack to hold working drawings, shop drawings, and record documents.
5. One standard four-drawer legal size metal filing cabinet with locks and two keys per lock.
6. Four linear ft of metal bookshelves, minimum 3 feet high.
7. Two swivel arm chairs.
8. One drafting table stool.
9. One tackboard 36 by 30 inch.
10. One waste basket per desk and table.
11. **Tables and chairs as needed to accomodate weekly Trade Meetings and Bi-Weekly Construction Meetings while following COVID-19 Safety Guidelines per NY State.**

PART 3 EXECUTION

3.01 INSTALLATION

A. Install office spaces ready for occupancy 15 days after date fixed in Notice to Proceed.

B. Locate offices a minimum distance of 30 feet from existing and new structures, unless otherwise indicated.

3.02 MAINTENANCE AND CLEANING

A. Weekly janitorial services for offices; periodic cleaning and maintenance for offices.

B. Maintain approach walks and access drives free of mud, water, and snow, and free of other obstructions.

C. Maintain all field offices, sheds, and surrounding site free of all debris.

D. **COVID-19 - Provide sanitizing sprays, wipes and towels for proper sanitizing of all workers and visitors. Safety and sanitizing procedures to be followed at ALL times per OSHA and NY State COVID-19 Safety Measures and Guidelines as well as the State and County Departments of Health.**

3.03 REMOVAL

A. At completion of Work remove buildings, foundations, utility services, & debris. Restore areas.

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END OF SECTION

SECTION 015500
VEHICULAR ACCESS AND PARKING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Access roads.

B. Parking.

C. Existing pavements and parking areas.

D. Permanent pavements and parking facilities.

E. Construction parking controls.

F. Flag persons.

G. Haul routes.

H. Traffic signs and signals.

I. Maintenance.

J. Removal, repair.

K. Mud from site vehicles.

1.02 RELATED REQUIREMENTS

A. Section 011100 - Summary: access to site, work sequence and occupancy.

B. Section 311000 - Site Clearing

C. Section 312000 - Earthwork

PART 2 PRODUCTS

2.01 MATERIALS

A. Temporary Construction: In accordance with Section 015713 - Temporary Erosion and Sediment Control.

B. Materials for Permanent Construction: As specified in product specification sections, including earthwork, paving base, and topping.

2.02 SIGNS, SIGNALS, AND DEVICES

A. Automatic Traffic Control Signals: As approved by local jurisdictions.

B. Traffic Cones and Drums, Flares and Lights: As approved by local jurisdictions.

C. Flag Person Equipment: As required by local jurisdictions.

PART 3 EXECUTION

3.01 MAINTAINANCE OF FREE AND UNOBSTRUCTED ACCESS FOR FIRE DEPARTMENT EQUIPMENT AND PERSONNEL

A. **This fire station is an essential facility. All contractors must, at all times, conduct their work in such a manner so as to NOT interfere with the work of the Fire Department once Occupancy OR Partial Occupancy is established.**

B. **Egress of firefighters and emergency equipment on and off the site is NEVER to be obstructed or delayed.**

C. **EXTREME CARE is to be taken in the selection of locations to store construction equipment and material. Any intended locations must be approved by the Owner, Owner's Representative and Architect.**

3.02 PREPARATION

A. Clear areas, provide surface and storm drainage of road, parking, area premises, and adjacent areas.

3.03 ACCESS ROADS

A. Use of designated existing on-site streets for construction traffic is permitted.

B. Tracked vehicles not allowed on paved areas.

C. Construct new temporary all-weather access roads from public thoroughfares to serve construction area, of a width and load bearing capacity to provide unimpeded traffic for construction purposes.

D. Extend and relocate as work progress requires, provide detours as necessary for unimpeded traffic flow.

E. Location as approved by Architect.

F. Provide unimpeded access for emergency vehicles. Maintain 20 foot width driveways with turning space between and around combustible materials.

G. Provide and maintain access to fire hydrants free of obstructions.

3.04 PARKING

A. Use of existing parking facilities by construction personnel is not permitted.

B. Use of designated areas of new parking facilities by construction personnel is permitted.

C. Provide temporary parking areas to accommodate use of construction personnel.

D. When site space is not adequate, provide additional off-site parking.

E. Locate as approved by Architect, Owner's Representative, or both.

3.05 Permanent pavements and parking facilities

A. Prior to Substantial Completion the base for permanent roads and parking areas may be used for construction traffic.

B. Avoid traffic loading beyond paving design capacity. Tracked vehicles not allowed.

3.06 CONSTRUCTION PARKING CONTROL

A. Control vehicular parking to prevent interference with public traffic and parking, access by emergency vehicles, and Owner's operations.

B. Monitor parking of construction personnel's vehicles in existing facilities. Maintain vehicular access to and through parking areas.

C. Prevent parking on or adjacent to access roads or in non-designated areas.

3.07 FLAG PERSONS

A. Provide trained and equipped flag persons to regulate traffic when construction operations or traffic encroach on public traffic lanes.

B. Any work performed within any public right-of-way shall be performed in accordance with all regulations of the New York State Department of Transportation.

3.08 HAUL ROUTES

A. Consult with the New York State Department of Transportation, establish public thoroughfares to be used for haul routes and site access.

B. Consult with local authorities to establish public thoroughfares to be used for haul routes and site access.

C. Confine construction traffic to designated haul routes.

D. Provide traffic control at critical areas of haul routes to regulate traffic, to minimize interference with public traffic.

3.09 TRAFFIC SIGNS AND SIGNALS

A. At approaches to site and on site, install at crossroads, detours, parking areas, and elsewhere as needed to direct construction and affected public traffic.

B. Relocate as work progresses, to maintain effective traffic control.

3.10 MAINTENANCE

A. Maintain traffic and parking areas in a sound condition free of excavated material, construction equipment, products, mud, snow, and ice.
   1. **Snow and ice removal and sanding includes the entire site until Owner occupancy. The use of salt is not permitted.**

B. Maintain new permanent paved areas used for construction; promptly repair breaks, potholes, low areas, standing water, and other deficiencies, to maintain paving and drainage in original, or specified, condition.

3.11 REMOVAL, REPAIR

A. Remove temporary roads when permanent paving is usable.

B. Repair new permanent facilities damaged by use, to specified condition.

C. Remove equipment and devices when no longer required.

D. Repair damage caused by installation.

3.12 MUD FROM SITE VEHICLES

A. Provide means of removing mud from vehicle wheels before entering streets. Failure to properly execute this requirement may result in street cleaning requirements at the sole expense of the Contractor.

B. Updates and maintenance to all stabilized construction entrances required by General Contractor for the life of the project to eliminate or minimize mud, dirt, debris tracking into local jurisdiction roadways.

END OF SECTION

SECTION 01 57 13 – TEMPORARY EROSION AND SEDIMENT CONTROL

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. This section includes furnishing, installing, maintaining, and removing temporary erosion and sediment control measures as shown on the contract documents or as ordered by the Engineer throughout the life of the contract to control soil erosion, sediment and water pollution through the use of temporary swales, check dams, bales, sediment traps, and silt fences.

B. Related Sections include other Division 31 Sections.

1.03 REFERENCES

A. Materials installation, maintenance, inspection and removal shall be in accordance with the *New York State Standards and Specifications For Erosion and Sediment Control*.

B. This project is subject to the New York State Department of Environmental Conservation Stormwater Pollution Prevention Plan. All terms and conditions of said permits shall be adhered to.

1.04 SUBMITTALS

A. Submittals shall be submitted in accordance with the provisions set forth in the General Specifications.

B. Submittal shall contain source and supplier of material showing its compliance with specifications and associated standards.

1. Samples of any kind shall be submitted upon Engineer's request.

C. The Contractor shall submit schedules for the accomplishment of temporary sediment control work.

PART 2 - PRODUCTS

2.01 GENERAL

a. Products shall be as specified on the contract drawings and as stated in *New York State Standards and Specifications For Erosion and Sediment Control*.

PART 3 - EXECUTION

3.01 INSTALLATION

A. In the event of conflict between these specification requirements and pollution control laws, rules or regulations by other federal, state or local government agencies, the more restrictive rules and regulations shall apply.

B. Temporary erosion and sediment control measures shall be inspected by the Contractor and maintained during the life of the project, and such maintenance and inspection shall continue until permanent stabilization measures are in place and the temporary control measures are ordered to be removed by the Engineer, and the disturbed area returned to its intended stabilized condition.

C. The Engineer has the authority to limit the surface area of erodible earth material exposed by excavation, borrow and fill operations and to direct the Contractor to provide immediate permanent or temporary erosion and sediment control measures to minimize damage to adjacent property and to minimize contamination of adjacent watercourses or wetlands.

D. The Contractor shall submit schedules for the accomplishment of temporary and permanent erosion and sediment control work to the Engineer for acceptance. All work done under this section shall be included as part of the construction schedule submitted by the Contractor.

E. Maintenance shall be performed as directed by the Engineer. All sediment deposits shall be considered unsuitable material and properly disposed of.

F. The Contractor shall immediately repair or replace defective or damaged portions of the erosion and sediment control facilities.

G. Erosion and sediment control measures shall be installed where necessary and shall remain in place until the area is permanently stabilized or the Engineer directs that it be removed. Upon removal, the Contractor shall remove and dispose of any sediment accumulations and restore the area as directed by the Engineer. The removed facilities and materials shall become the property of the Contractor and be removed from the site.

END OF SECTION 01 57 13

SECTION 015813
TEMPORARY PROJECT SIGNAGE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Project identification sign.

B. Project informational signs.

C. Contractor identification signs.

1.02 RELATED REQUIREMENTS

A. Section 011100 - Summary: Responsibility to provide signs.

1.03 QUALITY ASSURANCE

A. Design sign and structure to withstand 75 miles/hr wind velocity.

B. Sign Painter: Experienced as a professional sign painter for minimum three years.

C. Finishes, Painting: Adequate to withstand weathering, fading, and chipping for duration of construction.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Shop Drawing: Show content, layout, lettering, color, foundation, structure, sizesand grades of members. **Architect will provide template from previous projects as well as high resolution picture file of building rendering for use on the sign.**

PART 2 PRODUCTS

2.01 SIGN MATERIALS

A. Structure and Framing: New, wood, structurally adequate. Pressure treated at ground contact.

B. Sign Surfaces: Exterior grade plywood with medium density overlay, minimum 3/4 inch thick, standard large sizes to minimize joints.

C. Rough Hardware: Galvanized.

D. Paint and Primers: Exterior quality, high gloss enamel, two coats; sign background of color as selected; additional coats as required to provide complete hiding of surface and to provide good appearance and weather protection for duration of use.

E. Lettering: Exterior quality paint, colors as selected.

F. Materials for Directional Traffic Signs: Contractor's option.

2.02 PROJECT IDENTIFICATION SIGN

A. One painted sign, 4 ft high by 8 ft wide wide with two (2) legs, bottom 3 to 5 feet above ground.

B. Content:
   1. Project title,logo and name of Owner as indicated on Contract Documents.
   2. Name and address of Architect.
   3. Name and address of General Contractor.

C. Graphic Design, Colors, Style of Lettering: Designated by Architect.

D. Lettering: As approved by Architect.

2.03 PROJECT INFORMATIONAL SIGNS

A. Provide state and municipal traffic agency standard directional traffic signs to and within site where required to properly control vehicle and pedestrian traffic.

2.04 CONTRACTOR IDENTIFICATION SIGNS

A. Contractor may attach a single, maximum 4 foot by 8 foot sign to its trailer.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install project identification sign within 21 days after date fixed by Owner-Contractor Agreement.

B. Install traffic control signs as need arises and according to NYSDOT.

C. Erect at designated location.

D. Erect supports and framing on secure foundation, rigidly braced and framed to resist wind loadings.

E. Install sign surface plumb and level, with butt joints. Anchor securely.

F. Paint exposed surfaces of sign, supports, and framing.

3.02 MAINTENANCE

A. Maintain signs and supports clean, repair deterioration and damage.

3.03 REMOVAL

A. Remove signs, framing, supports, and foundations at Date of Substantial Completion or as otherwise directed by the Architect, and restore the area.

END OF SECTION

SECTION 016000
PRODUCT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. General product requirements.

B. Re-use of existing products.

C. Transportation, handling, storage and protection.

D. Product option requirements.

E. Substitution limitations.

F. Procedures for Owner-supplied products.

G. Maintenance materials, including extra materials, spare parts, tools, and software.

1.02 RELATED REQUIREMENTS

A. Section 011100 - Summary: List of Owner-supplied products.

B. Section 012500 - Substitution Procedures: Substitutions made during procurement and/or construction phases.

C. Section 014000 - Quality Requirements: Product quality monitoring.

1.03 REFERENCE STANDARDS

A. NEMA MG 1 - Motors and Generators 2018.

B. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.04 SUBMITTALS

A. Proposed Products List: Submit list of major products proposed for use, with name of manufacturer, trade name, and model number of each product.
   1. Submit within 15 days prior to the second Application for Payment. If the Contractor fails to provide this information on time, the Contractor may be liable for project delays and may jeopardize the Architect’s ability to properly evaluate any proposed substitutions.
   2. For products specified only by reference standards, list manufacturer, trade name, model or catalog designation and list applicable reference standards.
   3. Tabulate products by Specifications Section Number, Title, and Article Number.
   4. Allow fourteen (14) days for Architect's written reply stating whether there is reasonable objection to listed items. Daily allowance is time in possession of Architect and is exclusive of delivery from and to Contractor. Failure to object to a listed item does not constitute a waiver of requirements of Contract Documents.

B. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
   1. **When submitting multiple Product Data Sheet for various components of a system or multiple variations of similar products, such as Division 07 project sealants, label the top of each Product Data Sheet with the paragraph reference number from the related Section for each specific item. Failure to do so can be cause for immediate rejection by the Architect.**

C. Shop Drawing Submittals: Prepared specifically for this Project; indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
   1. Shop Drawings for Architectural and Structural requirements of the project shall include all detailing and dimensioning as required for Architect and Engineer review to be complete and thourough.

D. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
   1. For selection from standard finishes, submit samples of the actual materials in the full range of the manufacturer's standard colors, textures, and patterns. Color Charts will NOT be accepted except for Paint. Initial submittals for EIFS and TAFS (as applicable) will be via Color Charts with follow-up submittals of actual color and finish samples on 12x12 boards.

PART 2 PRODUCTS

2.01 EXISTING PRODUCTS

A. Do not use materials and equipment removed from existing premises unless specifically required or permitted by the Contract Documents.

B. Unforeseen historic items encountered remain the property of the Owner; notify Owner promptly upon discovery; protect, remove, handle, and store as directed by Owner.

C. Existing materials and equipment indicated to be removed, but not to be re-used, relocated, reinstalled, delivered to the Owner, or otherwise indicated as to remain the property of the Owner, become the property of the Contractor or other Prime Cont as related to work scope of discovery; remove from site.

D. Specific Products to be Reused: The reuse of certain materials and equipment already existing in the Owner's existing building is required.
   1. See Section 011100 and Section 110600 for list of items required to be salvaged for reuse and relocation. Unless noted as otherwise in the Contract Documents, the General Construction Contractor (GCC) is required to relocate salvaged equipment and materials from their existing location, transport to site and install.

2.02 NEW PRODUCTS

A. Provide new products unless specifically required or permitted by the Contract Documents.

B. Use of products having any of the following characteristics is not permitted:
   1. Made outside the U.S., its territories, Canada, or Mexico, unless otherwise unavailable.
   2. Made using or containing CFC's.

3. Made using HCFC's during the manufacturing process.

C. Where other criteria are met, Contractor shall give preference to products that:
1. Are extracted, harvested, and/or manufactured closer to the location of the project.
2. Have longer documented life span under normal use.
3. Result in less construction waste. See Section 017419

2.03 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description. (Equal)

B. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed. (As Specified)

C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named. (Equivalent)

D. Products Specified by Naming Only One Manufacturer: No options and/or no substitutions allowed. (Indicates a specialty item or specific design criteria.) (As Specified)

E. Products Specified by Basis of Design (BOD) with additional naming of other accepted Manufacturers (as specified but indicating based on specific design criteria). **Design changes required by Professional(s) of Record and/or material quantity or material size requirements that stem from submittal and use of a Manufacturer other than the BOD will require the Contractor to bear the cost of payments by the Owner to the responsible Professional(s) of Record for any related design changes as well as contractor-required additional material/labor fees stemming from this deviation from the BOD.**

2.04 MAINTENANCE MATERIALS

A. Furnish extra materials, spare parts, tools, and software of types and in quantities specified in individual specification sections.

B. Deliver to Project site; obtain receipt prior to final payment.

PART 3 EXECUTION

3.01 SUBSTITUTION LIMITATIONS

A. See Section 012500 - Substitution Procedures.

B. Substitutions will be considered when a product becomes unavailable through no fault of the Contractor.

C. A request for substitution constitutes a representation that the submitter:
1. Waives claims for additional costs or time extension that may be required or that may subsequently become apparent.
2. Certifies that cost data presented is complete and includes all related costs under its Contract.

D. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, when requested directly by a Subcontractor or supplier, or when acceptance will require substantial revision to the Contract

Documents.

E. The Architect for design purposes may specify certain systems, products and materials. These may be designated by name or model. Substitutions on an "or equivalent" basis will be allowed **if submitted for review prior to second payment application at the Architect's discretion** in the examination and approval of an "or equivalent" item or system.

F. Provide submittals for accepted substitutions in accordance with the individual specification section requirements.

G. Order all products in a timely manner to allow for fabrication and shipment, as untimely ordering is not a consideration for substitution acceptance.

H. **Do not order or install substitute products without written acceptance by the Architect.**

3.02 OWNER-SUPPLIED PRODUCTS

A. See Section 011100 - Summary and/or Section 110600 - Equipment Schedule for identification of Owner-supplied products.

B. Owner's Responsibilities:
1. Negotiate selection, purchase, and delivery with Vendor.
2. Arrange for and deliver Owner reviewed shop drawings, product data, and samples, to Contractor or other Prime Contractor.
3. Arrange and pay for product delivery to site.
4. On delivery, inspect products jointly with Contractor or the responsible Prime Contractor.
5. Submit claims, with Contractor's or responsible Prime Contractor's assistance, for transportation damage and replace damaged, defective, or deficient items.
6. Arrange for manufacturers' warranties, inspections, and service.
7. Coordinate special training for operation and maintenance.

C. Contractor Responsibilities:
1. Review Owner reviewed shop drawings, product data, and samples. process in same manner as required for products purchased by Contractor.
2. Receive and unload products at site; inspect for completeness or damage jointly with Owner.
3. Assist Owner with filing shipping and damage claims.
4. Inspect, handle, store, install, finish connect, align, adjust, test, and clean products in same manner as required for products purchased by Contractor.
5. Repair or replace items damaged after receipt, by construction activities, or both.

3.03 TRANSPORTATION AND HANDLING

A. Package products for shipment in manner to prevent damage; for equipment, package to avoid loss of factory calibration.

B. If special precautions are required, attach instructions prominently on outside of packaging.

C. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.

D. Transport and handle products in accordance with manufacturer's instructions.

E. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.

F. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.

G. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage, and to minimize handling.

H. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

3.04 STORAGE AND PROTECTION

A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication. See Section 017419.
   1. Structural Loading Limitations: Handle and store products and materials so as not to exceed static and dynamic load-bearing capacities of project floor areas.

B. Store and protect products in accordance with manufacturers' instructions.

C. Store with seals and labels intact and legible.

D. Arrange storage of materials and products to allow for visual inspection for the purpose of determination of quantities.

E. Store sensitive products in weathertight, climate-controlled enclosures in an environment favorable to product.

F. For exterior storage of fabricated products, place on sloped supports above ground.

G. Provide off-site storage and protection when site does not permit on-site storage or protection at no additional cost to Owner.

H. Protect products from damage/deterioration due to construction operations, weather, precipitation, humidity, temperature, sunlight, ultraviolet light, dirt, dust and other contaminants.

I. Comply with manufacturer's warranty conditions, if any.

J. Do not store products directly on the ground.

K. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.

L. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.

M. Prevent contact with material that may cause corrosion, discoloration, or staining.

N. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.

O. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

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SECTION 017000
EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Examination, preparation, and general installation procedures.

B. Requirements for alterations work, including selective demolition, except removal, disposal, and/or remediation of hazardous materials and toxic substances.

C. Pre-installation meetings.

D. Cutting and patching.

E. Surveying for laying out the work.

F. Cleaning and protection.

G. Starting of systems and equipment.

H. Tags and labels for systems and equipment.

I. Demonstration and instruction of Owner personnel.

J. Closeout procedures, including Contractor Correction Punch List, except payment procedures.

1.02 RELATED REQUIREMENTS

A. Section 011100 - Summary: Limitations on working in existing building; continued occupancy; work sequence; identification of salvaged and relocated materials.

B. Section 013000 - Administrative Requirements: Submittals procedures, Electronic document submittal service.

C. Section 014000 - Quality Requirements: Testing and inspection procedures.

D. Section 015000 - Temporary Facilities and Controls: Temporary exterior enclosures.

E. Section 015000 - Temporary Facilities and Controls: Temporary interior partitions.

F. Section 015100 - Temporary Utilities: Temporary heating, cooling, and ventilating facilities.

G. Section 015713 - Temporary Erosion and Sediment Control: Additional erosion and sedimentation control requirements.

H. Section 017419 - Construction Waste Management and Disposal: Additional procedures for trash/waste removal, recycling, salvage, and reuse.

I. Section 017800: Closeout Submittals including project record documents, operation and maintenance data, warranties, and bonds.

J. Section 017900 - Demonstration and Training: Demonstration of products and systems to be commissioned and where indicated in specific specification sections

K. Section 019020 - Enclosure Commissioning Requirements: Contractor's responsibilities in regard to commissioning and compliance with project specification requirements.

L. Section 078400 - Firestopping.

1.03 REFERENCE STANDARDS

A. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations 2019.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Survey work: GCC to submit name, address, and telephone number of Surveyor before starting survey work.
   1. On request, submit documentation verifying accuracy of survey work.
   2. Submit a copy of site drawing signed by the Land Surveyor, that the elevations and locations of the work are in compliance with Contract Documents.
   3. Submit surveys and survey logs for the project record.

C. Demolition Plan: Submit demolition plan as specified by OSHA and local authorities.
   1. Indicate extent of demolition, removal sequence, bracing and shoring, and location and construction of barricades and fences. Include design drawings and calculations for bracing and shoring.
   2. Identify demolition firm and submit qualifications.
   3. Include a summary of safety procedures.

D. Cutting and Patching: Submit written request in advance of cutting or alteration that affects:
   1. Structural integrity of any element of Project.
   2. Integrity of weather exposed or moisture resistant element.
   3. Efficiency, maintenance, or safety of any operational element.
   4. Visual qualities of sight exposed elements.
   5. Work of Owner or separate Contractor.
   6. Include in request:
      a. Identification of Project.
      b. Location and description of affected work.
      c. Necessity for cutting or alteration.
      d. Description of proposed work and products to be used.
      e. Effect on work of Owner or separate Contractor.
      f. Written permission of affected separate Contractor.
      g. Date and time work will be executed.

E. Project Record Documents: Accurately record actual locations of capped and active utilities.

1.05 QUALIFICATIONS

A. For demolition work, employ a firm specializing in the type of work required.
   1. Minimum of 5 years of documented experience.

B. For survey work, employ a land surveyor registered in New York and acceptable to Architect. Submit evidence of Surveyor's Errors and Omissions insurance coverage in the form of an Insurance Certificate.

C. For field engineering, employ a professional engineer of the discipline required for specific service on Project, licensed in New York. Employ only individual(s) trained and experienced in establishing and maintaining horizontal and vertical control points necessary for laying out construction work on project of similar size, scope and/or complexity.

D. For design of temporary shoring and bracing, employ a Professional Engineer experienced in design of this type of work and licensed in New York.

1.06 PROJECT CONDITIONS

A. Use of explosives is permitted as determied by Local Authroity Having Jurisdiction.

B. Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.

C. Protect site from puddling or running water. Provide water barriers as required to protect site from soil erosion.

D. Perform dewatering activities, as required, for the duration of the project.

E. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.

F. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and over adjacent property.
   1. Provide dust-proof enclosures to prevent entry of dust generated outdoors.
   2. Provide dust-proof barriers between construction areas and areas continuing to be occupied by Owner.

G. Erosion and Sediment Control - See Section 015713 and Civil/Site Drawings for additional requirements: Plan and execute work by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation.
   1. Minimize amount of bare soil exposed at one time.
   2. Provide temporary measures such as berms, dikes, and drains, to prevent water flow.
   3. Construct fill and waste areas by selective placement to avoid erosive surface silts or clays.
   4. Periodically inspect earthwork to detect evidence of erosion and sedimentation; promptly apply corrective measures.

H. Noise Control: Provide methods, means, and facilities to minimize noise produced by construction operations.
   1. Outdoors: Limit conduct of especially noisy exterior work to time and day limitations defined by the Local Authority Having Jurisdiction.

I. Pest and Rodent Control: Provide methods, means, and facilities to prevent pests and insects from damaging the work.
   1. Pest Control Service: Monthly treatments.

J. Rodent Control: Provide methods, means, and facilities to prevent rodents from accessing or invading premises.

K. Pollution Control: Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations. Comply with federal, state, and local regulations.

1.07 COORDINATION

A. See Section 011100 for occupancy-related requirements

B. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.

C. Notify affected utility companies and comply with their requirements.

D. Verify that utility requirements and characteristics of new operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.

E. Coordinate space requirements, supports, and installation of mechanical and electrical work that are indicated diagrammatically on drawings. Follow routing indicated for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.

F. **In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction.** Coordinate locations of fixtures and outlets with finish elements.

G. Coordinate completion and clean-up of work of separate sections.

H. After Owner occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

PART 2 PRODUCTS

2.01 PATCHING MATERIALS

A. New Materials: As specified in product sections; match existing products and work for patching and extending work.

B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.

C. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 012500 - Substitution Procedures.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.

B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.

C. Examine and verify specific conditions described in individual specification sections.

D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or misfabrication.

E. Verify that utility services are available, of the correct characteristics, and in the correct locations.

F. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

3.02 PREPARATION

A. Clean substrate surfaces prior to applying next material or substance.

B. Seal cracks or openings of substrate prior to applying next material or substance.

C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

3.03 PREINSTALLATION MEETINGS

A. When required in individual specification sections, convene a preinstallation meeting at the site prior to commencing work of the section. See Section 013000 Administration Requirements for additional information.

B. Require attendance of parties directly affecting, or affected by, work of the specific section.

C. Notify Architect 14 days in advance of meeting date. **Meeting date to coincide with the regularly scheduled bi-weekly construction meetings.** See Section 013000 Administrative Requirements for additional information.

D. Scope of Work Contractor shall prepare agenda and preside at meeting:
1. Review conditions of examination, preparation and installation procedures.
2. Review coordination with related work.

E. Scope of Work Contractor shall record minutes and distribute copies within two days after meeting to participants, with one copy via Electronic Document Submittal Service to Architect, Owner, participants, and those affected by decisions made.

3.04 LAYING OUT THE WORK

A. Verify locations of survey control points prior to starting work.

B. Promptly notify Architect of any discrepancies discovered.

C. Contractor shall locate and protect survey control and reference points.

D. Control datum for survey is that indicated on drawings.

E. Protect survey control points prior to starting site work; preserve permanent reference points during construction.

F. Promptly report to Architect the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.

G. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to Architect.

H. Utilize recognized engineering survey practices.

I. Establish a minimum of two permanent bench marks on site, referenced to established control points. Record locations, with horizontal and vertical data, on project record documents.

J. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:
   1. Site improvements including pavements; stakes for grading, fill and topsoil placement; utility locations, slopes, and invert elevations.
   2. Grid or axis for structures.
   3. Building foundation, column locations, ground floor elevations.

K. Periodically verify layouts by same means.

L. Maintain a complete and accurate log of control and survey work as it progresses.

M. **On completion of foundation walls and major site improvements, prepare a certified survey illustrating dimensions, locations, angles, and elevations of construction and site work.**

3.05 GENERAL INSTALLATION REQUIREMENTS

A. In addition to compliance with regulatory requirements, conduct construction operations in compliance with NFPA 241, including applicable recommendations in Appendix A.

B. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.

C. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.

D. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.

E. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.

F. Make neat transitions between different surfaces, maintaining texture and appearance.

3.06 ALTERATIONS

A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
   1. Verify that construction and utility arrangements are as indicated.
   2. Report discrepancies to Architect before disturbing existing installation.
   3. Beginning of alterations work constitutes acceptance of existing conditions.

B. Keep areas in which alterations are being conducted separated from other areas that are still occupied.
   1. Provide, erect, and maintain temporary dustproof partitions of construction specified in Section 015000 in locations indicated on drawings.
   2. Provide sound retardant partitions of construction indicated on drawings in locations indicated on drawings.

C. Maintain weatherproof exterior building enclosure except for interruptions required for replacement or modifications; take care to prevent water and humidity damage.
   1. Where openings in exterior enclosure exist, provide construction to make exterior enclosure weatherproof.
   2. Insulate existing ducts or pipes that are exposed to outdoor ambient temperatures by alterations work.

D. Remove existing work as indicated and as required to accomplish new work.
   1. Remove rotted wood, corroded metals, and deteriorated masonry and concrete; replace with new construction specified.
   2. Remove items indicated on drawings.
   3. Relocate items indicated on drawings.
   4. Where new surface finishes are to be applied to existing work, perform removals, patch, and prepare existing surfaces as required to receive new finish; remove existing finish if necessary for successful application of new finish.
   5. Where new surface finishes are not specified or indicated, patch holes and damaged surfaces to match adjacent finished surfaces as closely as possible.

E. Clean existing systems and equipment.

F. Remove demolition debris and abandoned items from alterations areas and dispose of off-site; do not burn or bury.

G. Comply with all other applicable requirements of this section.

3.07 CUTTING AND PATCHING

A. Whenever possible, execute the work by methods that avoid cutting or patching.

B. Perform whatever cutting and patching is necessary to:
   1. Complete the work.
   2. Fit products together to integrate with other work.
   3. Provide openings for penetration of mechanical, electrical, and other services.
   4. Match work that has been cut to adjacent work.
   5. Repair areas adjacent to cuts to required condition.
   6. Repair new work damaged by subsequent work.
   7. Remove samples of installed work for testing when requested.
   8. Remove and replace defective and non-complying work.

C. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing.
   1. All exposed finishes must be ready to receive paint, etc.; all concealed openings (piping, ductwork, conduit, etc.) must be repaired to comply with specified wall or deck conditions.

D. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.

E. **Cut holes are to be no more than 1/2” larger than object meant to pass through it.**

F. Restore work with new products in accordance with requirements of Contract Documents.

G. Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.

H. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material , to full thickness of the penetrated element.

I. Patching:
   1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
   2. Match color, texture, and appearance.
   3. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.

3.08 PROGRESS CLEANING

A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.

B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.

C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.

D. Execute cleaning to prevent contamination of wet or newly coated surfaces or of equipment.

E. Collect and remove waste materials, debris, and trash/rubbish from site twice a week and dispose off-site; do not burn or bury.

3.09 PROTECTION OF INSTALLED WORK

A. Protect installed work from damage by construction operations.

B. Provide special protection where specified in individual specification sections.

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

D. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.

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

F. Prohibit traffic from landscaped areas.

G. Remove protective coverings when no longer needed; reuse or recycle coverings if possible.

3.10 SYSTEM STARTUP

A. Coordinate with the requirements of Section 017900 - Demonstrating and Training.

B. System start-up includes, but is not limited to, **all** HVAC units, boiler(s) and any other type of heating or cooling unit as well as project generator.

C. Coordinate schedule for start-up of various equipment and systems.

D. Notify Architect and Owner seven days prior to start-up of each item.

E. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions that may cause damage.

F. Verify tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.

G. Verify that wiring and support components for equipment are complete and tested.

H. Execute start-up under supervision of applicable Contractor personnel and manufacturer's representative in accordance with manufacturers' instructions.

I. When specified in individual specification Sections, require manufacturer to provide authorized representative to be present at site to inspect, check, and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation.

J. Submit a written report that equipment or system has been properly installed and is functioning correctly. Report must be signed and witnessed by an authorized representative of the manufacturer.

3.11 TAGS AND LABELS

A. Contractor responsible for original installation to provide and install brass valve tags on all plumbing, gas, HVAC, and sprinkler systems; all valves, handles, gates, dampers, etc. Refer to individual specification sections for additional requirements.
   1. Project Operation and Maintenance Data Manual shall have a section that lists and identifies all tags.

B. Provide legible, printed, indelible labels for all electrical boxes, breakers, mains, switches, etc.

C. Provide legible, printed, indelible labels for all security, alarm, communications or similar systems.

3.12 DEMONSTRATION AND INSTRUCTION

A. See Section 017900 - Demonstration and Training.

B. Demonstrate operation and maintenance of products to Owner's personnel two weeks prior to date of Substantial Completion.

C. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at agreed time, at designated location.

D. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.

E. Provide a qualified person who is knowledgeable about the Project to perform demonstration and instruction of Owner's personnel.

F. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with Owner's personnel in detail to explain all aspects of operation and maintenance.

G. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.

H. The amount of time required for instruction on each item of equipment and system is that specified in individual sections.

3.13 ADJUSTING

A. Adjust operating products and equipment to ensure smooth and unhindered operation.

B. Testing, adjusting, and balancing HVAC systems: See Section 230593 - Testing, Adjusting, and Balancing for HVAC.

3.14 FINAL CLEANING

A. Execute final cleaning prior to final project assessment.
   1. Clean areas to be occupied by Owner prior to final completion before Owner occupancy.

B. Use cleaning materials that are nonhazardous.

C. Clean interior and exterior glass, mirrors, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.

D. Damp wipe water resistant surfaces, cabinet interiors, cabinet exteriors, and tile walls. Wipe dry.

E. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.

F. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.

G. Replace filters, strainers, etc. of all operating equipment, including any equipment used during construction.

H. Clean mechanical and electrical equipment surfaces.

I. Clean ducts, blowers, grills, and coils.

J. Clean light fixtures.

K. Clean ALL debris and other foregin matter from roofs, gutters, downspouts, and drainage systems.

L. Clean site; sweep paved areas, rake clean landscaped surfaces.

M. Remove ALL waste, surplus materials, trash/rubbish, and construction facilities from the site, including debris that has migrated to adjacent property; dispose of in legal manner; do not burn or bury.

N. Remove temporary protection and labels not otherwise required to remain.

O. In the event that the Contractor, subcontractors, suppliers, etc., create excessive debris, damage, or any other items that require repair after the final cleaning, then the Architect shall determine such damage and assess back charges accordingly. Architect’s decision is final.

3.15 CLOSEOUT PROCEDURES

A. Make submittals that are required by governing or other authorities.
   1. Provide copies to Architect and Owner.

B. Accompany Owner's Representative on preliminary inspection to determine items to be listed for completion or correction in Contractor's Notice of Substantial Completion.

C. Notify Architect when work is considered ready for Architect's Substantial Completion inspection.

D. Submit written certification containing Contractor's Correction Punch List, that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Architect's Substantial Completion inspection.

E. Conduct Substantial Completion inspection and create Final Correction Punch List containing Architect's and Contractor's comprehensive list of items identified to be completed or corrected and submit to Architect.

F. Correct items of work listed in executed Certificates of Substantial Completion and comply with requirements for access to Owner-occupied areas. **Complete work within thirty (30) calendar days of the issuance of the Project Punch List which will be assembled upon establishment of a certified Date of Substantial Completion.**

G. Accompany Owner's Representative on preliminary final inspection.

H. Notify Architect when work is considered finally complete and ready for Architect's Substantial Completion final inspection.

I. Complete items of work determined by Architect listed in executed Certificate of Substantial Completion.

3.16 CONTRACT CLOSE OUT FORMS AND INSTRUCTIONS

A. AIA Document G704 - Certification of Substantial Completion (Issued by Architect)
   1. The G704 must be signed and dated by an authorized representative of the Contractor.
   2. Three signed originals must be submitted to the Architect.

B. AIA Document G706 - Affidavit and Waiver of Lien
   1. Fill in all blanks of the form completely.
   2. The G706 must be signed and dated by Contractor’s authorized representative and notarized.
   3. Three signed and notarized originals must be submitted to the Architect.

C. AIA Document G702 - Application and Certificate for Payment

D. AIA Document G707 - Consent of Surety to Final Payment
   1. Fill in all blanks of the form completely.
   2. The G707 must be signed and dated by the Surety’s authorized representative and notarized.
   3. Three signed and notarized originals must be submitted to the Architect.

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SECTION 017329
CUTTING AND PATCHING

PART 1 GENERAL

1.01 GENERAL REQUIREMENTS

A. Work of this Section, as shown or specified, shall be in accordance with the requirements of the Contract Documents.

1.02 SECTION INCLUDES

A. This Section includes procedural requirements for cutting and patching. Contractor is responsible for all project cuts and cores and patching of same upon completion of work at each wall opening.

B. **Complete isolation between building HOT and COLD Zones as indicated on the Plans.**

1.03 RELATED SECTIONS

A. Refer to Divisions 3 through 32 Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.
   1. Requirements in this Section apply to mechanical and electrical installations. Refer to Divisions 22, 23 and 26 Sections for other requirements and limitations applicable to cutting and patching mechanical and electrical installations.

1.04 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.

1.05 SUBMITTALS

A. Cutting and Patching: Submit a method describing procedures at least 10 days before the time cutting and patching will be performed, requesting approval to proceed. Include the following information:
   1. Extent: Describe cutting and patching, show how they will be performed, and indicate why they cannot be avoided.
   2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building's appearance and other significant visual elements.
   3. Products: List products to be used and firms or entities that will perform the Work.
   4. Dates: Indicate when cutting and patching will be performed.
   5. Utilities: List utilities that cutting and patching procedures will disturb or affect. List utilities that will be relocated and those that will be temporarily out of service. Indicate how long service will be disrupted.

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

B. QUALITY ASSURANCE
1. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.
    a. Provide a list of additional elements that are structural elements and that require Architect's or Construction Manager's approval of a cutting and patching proposal.
2. Operational Elements: Do not cut and patch the following operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.
    a. Primary operational systems and equipment.
    b. Air or smoke barriers.
    c. **HOT-COLD Zone Wall Barrier Demarcation Line**.
    d. Fire-protection systems.
    e. Control systems.
    f. Communication systems.
    g. Conveying systems.
    h. Electrical wiring systems.
3. Miscellaneous Elements: Do not cut and patch the following 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 results in increased maintenance or decreased operational life or safety.
    a. Water, moisture, or vapor barriers.
    b. Membranes and flashings.
    c. Exterior curtain-wall construction.
    d. Equipment supports.
    e. Piping, ductwork, vessels, and equipment.
    f. Noise- and vibration-control elements and systems.
4. 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.
5. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.
    a. **HOT-COLD Zones:** Discuss the importance to establish and preserve the integrity of an air-tight HOT-COLD Zone Wall Barrier to ensure the elimination of migration of contaminants from the HOT (contaminate space) side of the facility to the COLD (people space) side of the facility. See Plan(s) for demarcation of this barrier line.

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

PART 2 PRODUCTS

2.01 MATERIALS

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

B. In-Place Materials: Use materials identical to existing materials. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
   1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of 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 existing finishes or primers.
   2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.02 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. See Section 017000 for additional requirements.
   2. In-Place Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
   3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
   4. Excavating and Backfilling: Comply with requirements in applicable Division 31 Sections where required by cutting and patching operations.
      a. 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 of these Specifications.
   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.
3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
    a. Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
4. Ceilings: Patch, repair, or rehang existing ceilings as necessary to provide an even-plane surface of uniform appearance.
5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weather-tight 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

SECTION 017419
CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 GENERAL

1.01 WASTE MANAGEMENT REQUIREMENTS

A. Owner requires that this project generate the least amount of trash and waste possible.

B. Employ processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors.

C. Minimize trash/waste disposal in landfills; reuse, salvage, or recycle as much waste as economically feasible.

D. Contractor shall submit periodic Waste Disposal Reports; all landfill disposal, recycling, salvage, and reuse must be reported regardless of to whom the cost or savings accrues; use the same units of measure on all reports.

E. Contractor shall develop and follow a Waste Management Plan designed to implement these requirements.

F. Methods of trash/waste disposal that are not acceptable are:
   1. Burning on the project site.
   2. Burying on the project site.
   3. Dumping or burying on other property, public or private.
   4. Other illegal dumping or burying.
   5. Incineration, either on- or off-site.

G. Regulatory Requirements: Contractor is responsible for knowing and complying with regulatory requirements, including but not limited to Federal, state and local requirements, pertaining to legal disposal of all construction and demolition waste materials.

1.02 RELATED REQUIREMENTS

A. Section 011100 - Summary: List of items to be salvaged from the existing building for relocation in project or for Owner. See also Section 110600 - Schedules for Equipment.

B. Section 013000 - Administrative Requirements: Additional requirements for project meetings, reports, submittal procedures, and project documentation.

C. Section 015000 - Temporary Facilities and Controls: Additional requirements related to trash/waste collection and removal facilities and services.

D. Section 016000 - Product Requirements: Waste prevention requirements related to delivery, storage, and handling.

E. Section 311100 - Clearing and Grubbing: Handling and disposal of land clearing debris.

1.03 DEFINITIONS

A. Clean: Untreated and unpainted; not contaminated with oils, solvents, caulk, or the like.

B. Construction and Demolition Waste: Solid wastes typically including building materials, packaging, trash, debris, and rubble resulting from construction, remodeling, repair and demolition operations.

C. Hazardous: Exhibiting the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity or reactivity.

D. Nonhazardous: Exhibiting none of the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity, or reactivity.

E. Nontoxic: Neither immediately poisonous to humans nor poisonous after a long period of exposure.

F. Recyclable: The ability of a product or material to be recovered at the end of its life cycle and remanufactured into a new product for reuse by others.

G. Recycle: To remove a waste material from the project site to another site for remanufacture into a new product for reuse by others.

H. Recycling: The process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for the purpose of using the altered form. Recycling does not include burning, incinerating, or thermally destroying waste.

I. Return: To give back reusable items or unused products to vendors for credit.

J. Reuse: To reuse a construction waste material in some manner on the project site.

K. Salvage: To remove a waste material from the project site to another site for resale or reuse by others.

L. Sediment: Soil and other debris that has been eroded and transported by storm or well production run-off water.

M. Source Separation: The act of keeping different types of waste materials separate beginning from the first time they become waste.

N. Toxic: Poisonous to humans either immediately or after a long period of exposure.

O. Trash: Any product or material unable to be reused, returned, recycled, or salvaged.

P. Waste: Extra material or material that has reached the end of its useful life in its intended use. Waste includes salvageable, returnable, recyclable, and reusable material.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Submit Waste Management Plan within (15) fifteen days after receipt of Notice to Proceed, or prior to any trash or waste removal, whichever occurs sooner; submit projection of all trash and waste that will require disposal and alternatives to landfilling.

C. Waste Management Plan: Include the following information:
   1. Analysis of the trash and waste projected to be generated during the entire project construction cycle, including types and quantities.
   2. Landfill Options: The name, address, and telephone number of the landfill(s) where trash/waste will be disposed of, the applicable landfill tipping fee(s), and the projected cost of disposing of all project trash/waste in the landfill(s).

3. Landfill Alternatives: List all waste materials that will be diverted from landfills by reuse, salvage, or recycling.
4. Materials Handling Procedures: Describe the means by which materials to be diverted from landfills will be protected from contamination and prepared for acceptance by designated facilities; include separation procedures for recyclables, storage, and packaging.
5. Transportation: Identify the destination and means of transportation of materials to be recycled; i.e. whether materials will be site-separated and self-hauled to designated centers, or whether mixed materials will be collected by a waste hauler.

D. Waste Disposal Reports: Submit at specified intervals, with details of quantities of trash and waste, means of disposal or reuse, and costs; show both totals to date and since last report.
1. Submit Report on a form acceptable to Owner.
2. Landfill Disposal: Include the following information:
   a. Identification of material.
   b. Amount, in tons or cubic yards, of trash/waste material from the project disposed of in landfills.
   c. State the identity of landfills, total amount of tipping fees paid to landfill, and total disposal cost.
   d. Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.

PART 2 PRODUCTS

2.01 PRODUCT SUBSTITUTIONS

A. See Section 016000 - Product Requirements for substitution submission procedures.

PART 3 EXECUTION

3.01 WASTE MANAGEMENT PROCEDURES

A. See Section 011100 for list of items to be salvaged from the existing building for relocation in project or for Owner.

B. See Section 013000 for additional requirements for project meetings, reports, submittal procedures, and project documentation.

C. See Section 015000 for additional requirements related to trash/waste collection and removal facilities and services.

D. See Section 016000 for waste prevention requirements related to delivery, storage, and handling.

E. See Section 017000 for trash/waste prevention procedures related to demolition, (as applicable), cutting and patching, installation, protection, and cleaning.

3.02 WASTE MANAGEMENT PLAN IMPLEMENTATION

A. Manager: Designate an on-site person or persons responsible for instructing workers and overseeing and documenting results of the Waste Management Plan.

B. Communication: Distribute copies of the Waste Management Plan to job site foreman, each subcontractor, Owner, and Architect.

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

D. Hazardous Wastes: Separate, store, and dispose of hazardous wastes according to applicable regulations.

E. Recycling: Separate, store, protect, and handle at the site identified recyclable waste products in order to prevent contamination of materials and to maximize recyclability of identified materials. Arrange for timely pickups from the site or deliveries to recycling facility in order to prevent contamination of recyclable materials.

F. Reuse of Materials On-Site: Set aside, sort, and protect separated products in preparation for reuse.

G. Salvage: Set aside, sort, and protect products to be salvaged for reuse off-site.

END OF SECTION

SECTION 017800
CLOSEOUT SUBMITTALS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Project Record Documents.

B. Operation and Maintenance Data.

C. Warranties and bonds.

D. Spare parts and maintenance materials.

1.02 RELATED REQUIREMENTS

A. Section 005000 - Contracting Forms and Supplements: Forms required for contract closeout.

B. Section 007200 - General Conditions and 007300 - Supplementary Conditions: Performance bond and labor and material payment bonds, warranty, and correction of work.

C. Section 013000 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.

D. Section 017000 - Execution and Closeout Requirements: Contract closeout procedures.

E. Individual Product Sections: Specific requirements for operation and maintenance data.

F. Individual Product Sections: Warranties required for specific products or Work.

G. Individual Product Sections: Spare parts and maintenance materials required for specific products or Work.

1.03 SUBMITTALS

A. Contract Closeout Forms: See Section 005000 for closeout forms and instructions. Submit with claim for Application for Final Payment in accordance with Section 012000.

B. Project Record Documents: Submit documents to Architect with claim for final Application for Payment.

C. Operation and Maintenance Data:
   1. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. Architect will review draft and return one copy with comments. Allow fourteen (14) days for Architect's review excluding time for delivery from and return to Contractor.
   2. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit completed documents within ten days after acceptance.
   3. Submit one copy of completed documents 15 days prior to final inspection. This copy will be reviewed and returned after final inspection, with Architect comments. Revise content of all document sets as required prior to final submission.

4. Submit two sets of revised final documents in final form within 10 days after final inspection. Submit to Architect for transmission to Owner.

D. Warranties and Bonds:
1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 10 days after acceptance.
2. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.

E. Spare Parts and Maintenance Materials:
1. For products, systems, equipment or component parts of equipment put into service during construction with Owner's permission, submit spare parts, maintenance materials, tools, and other required items within 10 days after acceptance.
2. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance.

F. Miscellaneous Materials
1. Submit within 10 days after Date of Substantial Completion.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PROJECT RECORD DOCUMENTS

A. Maintain on site two (2) sets of the following record documents; record actual revisions to the Work:
1. Drawings.
2. Specifications.
3. Addenda.
4. Change Orders and other modifications to the Contract.
5. Reviewed shop drawings, product data, and samples.
6. Manufacturer's instruction for assembly, installation, and adjusting.
7. Field record survey.
8. MSDS Sheets.
9. Lists of spare parts.
10. Field test and inspection reports.
11. Additional record documents: As specified in individual product specification sections.

B. Ensure entries are complete and accurate, enabling future reference by Owner.

C. Store record documents separate from documents used for construction. Maintain in a clean, dry, and undamaged condition.

D. Record information concurrent with construction progress.

E. Drawing media: record data on as built plans and specs, available through Architect. Use mark-up materials appropriate to specified media.

F. Opaque document mark-up procedures:
   1. Mark-up method: indelible Red ink.
   2. Mark-up color for changes and confirmations: Red
   3. Mark-up color for mechanical and electrical systems: Red

G. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
   1. Manufacturer's name and product model and number.
   2. Product substitutions or alternates utilized.
   3. Products not described in the Contract Documents.
   4. Changes made by Addenda and modifications.

H. Record Drawingsand Shop Drawings: Legibly mark each item to record actual construction including:
   1. Measured depths of foundations in relation to finish first floor datum.
   2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
   3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
   4. Field changes of dimension and detail.
   5. Details not on original Contract drawings.

3.02 OPERATION AND MAINTENANCE DATA

A. Source Data: For each product or system, list names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.

B. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.

C. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.

D. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

3.03 OPERATION AND MAINTENANCE DATA FOR MATERIALS AND FINISHES

A. For Each Product, Applied Material, and Finish:
   1. Product data, with catalog number, size, composition, and color and texture designations.
   2. Information for re-ordering custom manufactured products.

B. Instructions for Care and Maintenance: Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental cleaning agents and methods, and recommended schedule for cleaning and maintenance.

C. Moisture protection and weather-exposed products: Include product data listing applicable reference standards, chemical composition, and details of installation. Provide recommendations for inspections, maintenance, and repair.

D. Additional information as specified in individual product specification sections.

E. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.

3.04 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS

A. For Each Item of Equipment and Each System:
   1. Description of unit or system, and component parts.
   2. Identify function, normal operating characteristics, and limiting conditions.
   3. Include performance curves, with engineering data and tests.
   4. Complete nomenclature and model number of replaceable parts.

B. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.

C. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications; typed.

D. Include color coded wiring diagrams as installed.

E. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.

F. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and trouble shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.

G. Provide servicing and lubrication schedule, and list of lubricants required.

H. Include manufacturer's printed operation and maintenance instructions.

I. Include sequence of operation by controls manufacturer.

J. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.

K. Provide control diagrams by controls manufacturer as installed.

L. Provide Contractor's coordination drawings, with color coded piping diagrams as installed.

M. Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.

N. Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.

O. Include test and balancing reports.

P. Include completed mechanical system start-up reports.

Q. Include list that identifies all tags and labels. See Section 017000 - Execution and Closeout Requirements.

R. Additional Requirements: As specified in individual product specification sections.

3.05 ASSEMBLY OF OPERATION AND MAINTENANCE MANUALS

A. Assemble operation and maintenance data into durable manuals for Owner's personnel use, with data arranged in the same sequence as, and identified by, the specification sections.

B. Where systems involve more than one specification section, provide separate tabbed divider for each system.

C. Binders: Commercial quality, 8-1/2 by 11 inch three D side ring binders with durable plastic covers; 4 inch (or otherwise as appropriate in size) maximum ring size. When multiple binders are used, correlate data into related consistent groupings.

D. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.

E. Project Directory: Title and address of Project; names, addresses, and telephone numbers of Architect, Consultants, Contractor, subcontractors, with names of responsible parties.

F. Tables of Contents: List every item separated by a divider, using the same identification as on the divider tab; where multiple volumes are required, include all volumes Tables of Contents in each volume, with the current volume clearly identified.

G. Dividers: Provide tabbed dividers for each separate product and system; identify the contents on the divider tab; immediately following the divider tab include a description of product and major component parts of equipment.

H. Text: Manufacturer's printed data, or typewritten data on 20 pound paper.

I. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.

J. Arrangement of Contents: Organize each volume in parts as follows:
   1. Project Directory.
   2. Table of Contents, of all volumes, and of this volume.
   3. Operation and Maintenance Data: Arranged by system, then by product category.
      a. Source data.
      b. Product data, shop drawings, and other submittals.
      c. Operation and maintenance data.
      d. Field quality control data.
      e. Photocopies of warranties and bonds.

3.06 WARRANTIES AND BONDS

A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Substantial completion is determined.
   1. Warranties will only begin if the item, system, etc. is in good, working order and has been accepted by the Owner.

B. Verify that documents are in proper form, contain full information, and are notarized.

C. Co-execute submittals when required.

D. Retain warranties and bonds until time specified for submittal.

E. Manual: Bind in commercial quality 8-1/2 by 11 inch three D side ring binders with durable plastic covers.

F. Cover: Identify each binder with typed or printed title WARRANTIES AND BONDS, with title of Project; name, address and telephone number of Contractor and equipment supplier; and name of responsible company principal.

G. Table of Contents: Neatly typed, in the sequence of the Table of Contents of the Project Manual, with each item identified with the number and title of the specification section in which specified, and the name of product or work item.

H. Separate each warranty or bond with index tab sheets keyed to the Table of Contents listing. Provide full information, using separate typed sheets as necessary. List Subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.

3.07 SPARE PARTS AND MAINTENANCE MATERIALS

A. Provide spare parts, maintenance materials, tools, and other items as specified in individual product specification sections.

B. Retain in original shipping containers except when removal therefrom is necessary for inspection or verification.

C. Maintain labels legible and intact. Maintain manufacturer’s published information with respective item.

D. Handle and store in the same manner as required for that which is installed in the Work.

E. Deliver to storage area designated by Owner.

3.08 MISCELLANEOUS MATERIALS

A. Transfer keys and logs to Owner.

B. Provide two (2) complete sets of all above Close-Out materials in electronic format (CD). Insert one (1) set of CD's with Owner's Manuals and provide Architect with one (1) set of CD's for their records.

END OF SECTION

SECTION 017900
DEMONSTRATION AND TRAINING

PART 1 GENERAL

1.01 SUMMARY

A. Demonstration of products and systems where indicated in specific specification sections.

B. Training of Owner personnel in operation and maintenance is required for:
1. All software-operated systems.
2. HVAC systems and equipment.
3. Plumbing equipment.
4. Electrical systems and equipment.
5. Conveying systems.
6. Landscape irrigation.
7. Items specified in individual product Sections.

C. Training of Owner personnel in care, cleaning, maintenance, and repair is required for:
1. Roofing, waterproofing, and other weather-exposed or moisture protection products.
2. Finishes, including flooring, wall finishes, ceiling finishes.
3. Fixtures and fittings.
4. Items specified in individual product Sections.

1.02 RELATED REQUIREMENTS

A. Section 017800 - Closeout Submittals: Operation and maintenance manuals.

B. Section 019020 - Building Enclosure Commissioning Requirements

C. Other Specification Sections: Additional requirements for demonstration and training.

1.03 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Training Plan: Owner will designate personnel to be trained; tailor training to needs and skill-level of attendees.
1. Submit to Architect for transmittal to Owner.
2. Submit not less than two weeks prior to start of training.
3. Revise and resubmit until acceptable.
4. Provide an overall schedule showing all training sessions.
5. Include at least the following for each training session:
    a. Identification, date, time, and duration.
    b. Description of products and/or systems to be covered.
    c. Name of firm and person conducting training; include qualifications.
    d. Intended audience, such as job description.
    e. Objectives of training and suggested methods of ensuring adequate training.
    f. Methods to be used, such as classroom lecture, live demonstrations, hands-on, etc.
    g. Media to be used, such a slides, hand-outs, etc.

h. Training equipment required, such as projector, projection screen, etc., to be provided by Contractor and All Prime Contractors, as applicable.

C. Training Manuals: Provide training manual for each attendee; allow for minimum of two attendees per training session.
1. Include applicable portion of O&M manuals.
2. Include copies of all hand-outs, slides, overheads, video presentations, etc., that are not included in O&M manuals.
3. Provide one extra copy of each training manual to be included with operation and maintenance data.

D. Training Reports:
1. Identification of each training session, date, time, and duration.
2. Sign-in sheet showing names and job titles of attendees.
3. List of attendee questions and written answers given, including copies of and references to supporting documentation required for clarification; include answers to questions that could not be answered in original training session.
4. Include Construction Manager's formal acceptance of training session.

E. Video Recordings: Submit digital video recording of each demonstration and training session for Owner's subsequent use.
1. Format: DVD Disc.
2. Label each disc and container with session identification and date.

1.04 QUALITY ASSURANCE

A. Instructor Qualifications: Familiar with design, operation, maintenance and troubleshooting of the relevant products and systems.
1. Provide as instructors the most qualified trainer of those contractors and/or installers who actually supplied and installed the systems and equipment.
2. Where a single person is not familiar with all aspects, provide specialists with necessary qualifications.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 DEMONSTRATION - GENERAL

A. Demonstrations conducted during system start-up do not qualify as demonstrations for the purposes of this section, unless approved in advance by Owner.

B. Demonstrations conducted during Functional Testing need not be repeated unless Owner personnel training is specified.

C. Demonstration may be combined with Owner personnel training if applicable.

D. Operating Equipment and Systems: Demonstrate operation in all modes, including start-up, shut-down, seasonal changeover, emergency conditions, and troubleshooting, and maintenance procedures, including scheduled and preventive maintenance.
1. Perform demonstrations not less than two weeks prior to Substantial Completion.
2. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.

E. Non-Operating Products: Demonstrate cleaning, scheduled and preventive maintenance, and repair procedures.
   1. Perform demonstrations not less than two weeks prior to Substantial Completion.

3.02 TRAINING - GENERAL

A. Conduct training on-site unless otherwise indicated.

B. Owner will provide classroom and seating at no cost to Contractor or Sub-Contractors.

C. Training schedule will be subject to availability of Owner's personnel to be trained; re-schedule training sessions as required by Owner; once schedule has been approved by Owner failure to conduct sessions according to schedule will be cause for Owner to charge Contractor or other Prime Contractors, as applicable, for personnel "show-up" time.

D. Review of Facility Policy on Operation and Maintenance Data: During training discuss:
   1. The location of the O&M manuals and procedures for use and preservation; backup copies.
   2. Typical contents and organization of all manuals, including explanatory information, system narratives, and product specific information.
   3. Typical uses of the O&M manuals.

E. Product- and System-Specific Training:
   1. Review the applicable O&M manuals.
   2. For systems, provide an overview of system operation, design parameters and constraints, and operational strategies.
   3. Review instructions for proper operation in all modes, including start-up, shut-down, seasonal changeover and emergency procedures, and for maintenance, including preventative maintenance.
   4. Provide hands-on training on all operational modes possible and preventive maintenance.
   5. Emphasize safe and proper operating requirements; discuss relevant health and safety issues and emergency procedures.
   6. Discuss common troubleshooting problems and solutions.
   7. Discuss any peculiarities of equipment installation or operation.
   8. Discuss warranties and guarantees, including procedures necessary to avoid voiding coverage.
   9. Review recommended tools and spare parts inventory suggestions of manufacturers.
   10. Review spare parts and tools required to be furnished by Contractor.
   11. Review spare parts suppliers and sources and procurement procedures.

F. Be prepared to answer questions raised by training attendees; if unable to answer during training session, provide written response within three days.

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SECTION 019020
BUILDING ENCLOSURE COMMISSIONING REQUIREMENTS

PART 1 GENERAL

1.01 SUMMARY

A. This section includes administrative, procedural and testing requirements for commissioning the enclosure hygro-thermal control systems. These systems are intended to achieve an exterior enclosure that controls rain, surface and subsurface water, heat loss and gain, air leakage and water vapor migration such that:
   1. Materials in the enclosure are protected from moisture damage resulting from intrusion of rain, snow melt, surface and subsurface moisture or leaks caused by frozen pipes
   2. Mechanical systems are able to maintain thermal comfort in occupied spaces
   3. Ice dams and icicles do not damage enclosure materials or pose a safety risk to pedestrians
   4. Air leakage through the enclosure does not contribute significantly to any of the potential problems listed above.

B. The purpose of the building enclosure commissioning (BECx) is to provide a process for independent, third-party verification that the installed performance of the building enclosure meets or exceeds the minimum performance requirements set forth by the Contract Documents for this project. The materials, components, systems, and assemblies that comprise the above and below-grade building exterior enclosure will be evaluated and tested as outlined in this Section, as wellas in accordance with each of the technical Sections associated with the design and construction of the building enclosure.

1.02 Related Sections:

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other General Requirements and Technical Specification Sections, apply to this Section.
   1. Division 01 through 09 Sections containing building enclosure commissioning requirements

1.03 DEFINITIONS

A. Enclosure hygro-thermal control systems: Those elements of an enclosure that protect the interior from rain, snow melt, surface and subsurface water intrusion, control heat loss or gain by thermal conduction and air leakage and prevent condensation by managing water vapor migration by diffusion and air leakage while managing surface temperatures.

B. Exterior enclosure: The exterior enclosure consists of roofs and skylights; above grade walls, windows, curtainwalls, and doors, and below grade walls and floors. It includes all materials, components, assemblies, connecting flashings, air barrier and moisture control transition membranes, sealants and expansion joints that separate the interior environment from outdoors and adjoining unconditioned spaces.

C. Moisture control layers and drainage systems: Materials and systems that prevent the intrusion of rainwater into areas of the building containing materials that must remain dry. The outer layers of the exterior enclosure contain moisture tolerant materials that intercept and channel

liquid water away from the building to designated disposal. They provide drainage and a capillary break that prevents water from leaking or wicking past the moisture tolerant exterior portion of walls, roofs, windows and foundations into the portions of the enclosure that must remain dry.

D. Building Enclosure Commisioning Agent: A third party person or firm with a minimum of three (3) years of experience in the testing and evaluating of building envelopes for determination of hygro-thermal control system performance. The Building Enclosure Commissioning Agent **will be employed for such services by the Owner**. The employment of this third party commissioning agent in no way relieves the General Construction Contractor from their obligations to perform their work in accordance with the Contract Documents.

1.04 BUILDING ENVELOPE COMMISSIONING AGENT REQUIREMENTS

A. A commissioning authority identified by the Owner to lead the building enclosure commissioning and possesses “basic architectural and building science knowledge of the design, performance, systems and construction related to the building enclosure.” (NIBS 3)

B. Possesses a minimum of three (3) years' experience in testing similar buildings

C. Provides a minimum of three (3) references for three buildings of similar nature that have been tested

D. Possesses a minimum of three (3) years' experience identifying air leakage sites in buildings using methods referenced in ASTM E1186

E. Project Understanding - Ability to provide a comprehensive Narrative that illustrates the firm' s understanding of the commissioning requirements for this project.

F. Project Approach - Ability to provide a thorough description the firm' s approach to executing the project.

G. Qualifications/Certifications for evaluation considerations:
   1. ASTM/NIBS Building Envelope Commissioning (BECx) Certifications and Training Program completion.
   2. Minimum of five (5) years architectural-related construction experience.
   3. Air Barrier Association (ABA) or Roofing Ccnsultants Institute (RCI) training class(es) completion.
   4. Experience or Training designing, installing or supervising the installation of wall or roof assemblies that include:
      a. Fluid applied air-moisture barriers and accessory membrane, primer, mastic and sealant assemblies
      b. Self-adhered air-moisture barriers and accessory membrane, primer, mastic and sealant assemblies
      c. Two-part spray polyurethane closed cell and open cell foam insulation
      d. Including quality assurance activities for each system
   5. Familiar with, officially witnessed or conducted air leakage rain intrusion testing of:
      a. Performance mock-ups, E1186, E1105, E2319, E2357, E779, E1827
      b. Portions of enclosures, E1186, E2319, E2357
      c. Whole buildings E779, E1827

1.05 GENERAL CONSTRUCTION CONTRACTORS RESPONSIBILITIES

A. Provide coordination and sequence of construction to ensure the continuity of air barrier systems, insulation systems, moisture control systems located in the exterior enclosure

including the condensation control within the enclosure.

B. Organize and attend meetings between the trades involved in construction of enclosure assemblies and installation of air barrier systems, above grade rain water control, below grade water control systems, insulation systems and condensation control to determine schedules, sequence of construction and how continuity will be maintained where one subcontractors work meets another's.

C. Provide the following submittals to the building enclosure commissioning agent:
   1. Shop drawings tracing moisture control, insulation and air barriers at each type of joint, juncture and transition between products, materials and assemblies.
   2. Product Data Sheets for all products, comonents, systems used as part of the final exterior building envelope.

D. Build mock-ups and in situ test spaces as required in this section and in Divisions 2 through 9.

E. Participate in testing installed systems, subsystems and construction.

F. Cooperate with commissioning agent (as applicable) and testing agencies performing required inspections, sample collection, tests and similar services and provide incidental labor, equipment, means of access to work and adequate notice of schedule required for inspections and quality assurance testing to take place.

G. Provide a repair and remediation protocol for systemic failures identified by the commissioning agent and/or testing agency.

1.06 ENCLOSURE COMMISSIONING AGENT RESPONSIBILITIES

A. Develop an enclosure commissioning plan specific to the project.

B. Review Owners Project Requirements and Basis of Design.

C. Review plans and specifications in regard to the hygro-thermal enclosure functions (continuous air barrier systems, moisture control and drainage continuity, insulation continuity and condensation control).

D. Review General Construction Contractor's and sub-contractors enclosure quality assurance plans.

E. Review submittals of materials and systems that perform hygro-thermal functions and provide written comment for corrections as noted or resubmittal by General Construction Contractor.

F. Participate in an initial meeting including the Architect, General Construction Contractor (GCC), owner's representative and the trades involved in construction of assemblies and installation of air barrier systems, above grade rain water control, below grade water control systems and insulation systems to determine schedules, sequence of construction and how continuity will be maintained where one subcontractors work meets another's.

G. Coordinate with the GCC, Construction Manager and/or Architect to make site visits to perform inspections of Work during the installation of air barriers, insulation, above and below grade drainage planes and related substrates. Review enclosure related QA documentation collected and kept by the GCC and enclosure subcontractors as required in Divisions 1 through 9. Document installed systems irregularities and deficiencies with narrative and photographs. Identify potential issues observed in Work in Progress.

H. Notify the Architect and GCC promptly of irregularities or deficiencies observed in the Work during inspections and testing.

I. Conduct, witness or review mock-up, in situ testing and final verification testing as specified in 1.09 Functional Testing of this document and in the requirements of individual specification sections in Divisions 1 through 9. Prepare a report documenting the test conditions and results.

J. The Building Enclosure Commissioning Agent is **not** authorized to:
1. Release, revoke, alter or expand requirements of Contract Documents
2. Approve or accept any portion of work
3. Perform any duties of the GCC

1.07 REFERENCES

A. ASTM E283 Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen

B. ASTM E783 Test Method for Field Measurement of Air Leakage Through Installed Exterior Windows and Doors

C. ASTM E779 Test Method for Determining Air Leakage Rate by Fan Pressurization

D. ASTM E1186 Practices for Air Leakage Site Detection in Building Envelopes and Air Barrier Systems

E. ASTM E1105 Test Method for Field Determination of Water Penetration of Installed Exterior Windows, Skylights, Doors, and Curtain Walls, by Uniform or Cyclic Static Air Pressure Difference

F. AAMA 501.1 Standard Test Method for Water Penetration of Windows, Curtain Walls, and Doors Using Dynamic Pressure

G. AAMA 501.2 Quality Assurance and Diagnostic Water Leakage Field Check of Installed Storefronts, Curtain Walls, and Sloped Glazing Systems

1.08 QUALITY ASSURANCE

A. Quality assurance inspections and product specific testing for the enclosure hygro-thermal systems are conducted by:
1. Subcontractor:
   a. Subcontractor's installing hygro-thermal control systems shall have a Quality Assurance program that includes daily inspection and testing of completed work as required in the Divisions 2 through 9
2. General Construction Contractor QA officer:
   a. Daily observations of the installation of air barrier systems, moisture control systems, thermal insulation systems and vapor retarders shall be documented in daily log
3. Building Enclosure Commissioning Agent:
   a. The building enclosure commissioning agent shall provide third party QA inspections and testing as specified in this section. As a minimum, the following inspections shall occur:
      1) At the first instance of hygro-thermal control systems application to foundations, exterior walls and roof assemblies
      2) At the first instance of the roof-wall hygro-thermal system connections
      3) At the first instance hygro-thermal system connections between walls and window systems

1.09 FUNCTIONAL TESTING

A. Mockups:
   1. Mockups of any exterior portion of the building required in Divisions 1 through 9 shall include all materials and accessories required to install the designated air leakage control, the rain control, the insulation system and water vapor control system. The sequence of construction will be managed in such a way that the various systems perform their intended functions.
   2. Mockups intended to pass a functional performance test specified in Divisions 2 through 9, such as ASTM E1105 water penetration test or an ASTM E783 window air leakage test, must be constructed in accordance with the specific test procedure. Criteria for determining whether a mockup passes the test or not are specified in Division 1 through 9.

B. In situ testing:
   1. In situ testing shall be performed as required in Divisions 1 through 9.
   2. A completed portion of the building may be used to perform testing of the air barrier systems:
      a. A top floor corner room that is part of the permanent new building construction may be completed to the point that the roof and wall air barrier systems for the test room are complete and the roof wall connection has been made.
      b. Testing will occur when the air barrier systems are installed but before they have been covered by insulation or cladding systems. The interior walls of the room must have a layer of mudded gypsum board installed on the test room side of the walls. The interior wall gypsum board must be sealed to the roof system and floor deck to the backside of the exterior wall air barrier system where the interior wall intersects the exterior wall.
      c. The test room will be pressurized to 20 Pascals relative to outdoors. Air leaks in the air barrier systems will be identified using theatrical fog or infrared imaging.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.01 BECx Agent:

A. Jonathan Poyta

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