SECTION 01 08 00 - GENERAL COMMISSIONING REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and other Division 01 Specification Sections, apply to this Section.
B. Owner's Project Requirements and Basis-of-Design documentation are included by reference for information only.

1.2 SUMMARY

A. Section Includes:

1. General requirements for coordinating and scheduling commissioning.
2. Commissioning meetings.
3. Commissioning reports.
4. Test equipment, instrumentation, and tools (including, but not limited to, proprietary test equipment, instrumentation, and tools) required to perform tests.
5. Use of test equipment, instrumentation, and tools for commissioning.
6. Construction checklist requirements, including, but not limited to, installation checks, startup, performance tests, and performance test demonstration.
7. Commissioning tests and commissioning test demonstration.
8. Adjusting, verifying, and documenting identified systems and assemblies.
9. Work to correct commissioning issues.
10. Work to repeat tests when equipment and systems fail acceptance criteria.

B. Related Requirements:

1. Section 01 33 00 "Submittal Procedures" for submittal procedures requirements for commissioning.

2. Section 01 77 00 "Closeout Procedures" for certificate of Construction Phase Commissioning Completion submittal requirements.

3. Section 01 78 23 "Operation and Maintenance Data" for preliminary operation and maintenance data submittal.

4. Section 23 08 00 "Commissioning of HVAC" for technical commissioning requirements for HVAC systems.

5. Section 26 08 00 "Commissioning of Electrical" for technical commissioning requirements for Electrical systems.

6. Individual Technical Specifications and Drawings: Equipment and systems design and installation, startup, field quality-control testing, and additional requirements indicated in the Contract Documents.

1.3 DEFINITIONS

A. Acceptance Criteria: Threshold of acceptable work quality or performance specified for a commissioning activity, including, but not limited to, construction checklists, performance tests, performance test demonstrations, commissioning tests and commissioning test demonstrations.

B. Basis-of-Design Document: A document prepared by Owner, Architect, or Commissioning Authority that records concepts, calculations, decisions, and product selections used to comply with Owner's Project Requirements and to suit applicable regulatory requirements, standards, and guidelines.

C. Commissioning Authority: An entity engaged by Owner, and identified in Section 011000 "Summary," to evaluate Commissioning-Process Work.

D. Commissioning Plan: A document, prepared by Commissioning Authority, that outlines the organization, schedule, allocation of resources, and documentation requirements of commissioning.

E. Commissioning: A quality-focused process for verifying and documenting that the facility and all of its systems and assemblies are planned, designed, installed, and tested to comply with Owner's Project Requirements. The requirements specified here are limited to the construction phase commissioning activities. The scope of commissioning is defined in Section 011200 "Multiple Contract Summary."

F. Construction Phase Commissioning Completion: The stage of completion and acceptance of commissioning when resolution of deficient conditions and issues discovered during commissioning and retesting until acceptable results are obtained has been accomplished. Owner will establish in writing the date Construction Phase Commissioning Completion is achieved. See Section 017700 "Closeout Procedures" for certificate of Construction Phase Commissioning Completion submittal requirements.

1. Commissioning is complete when the work specified in this Section and related Sections has been completed and accepted, including, but not limited to, the following:

    a. Completion of tests and acceptance of test results.
    b. Resolution of issues, as verified by retests performed and documented with acceptance of retest results.
    c. Comply with requirements in Section 017900 "Demonstration and Training."
    d. Completion and acceptance of submittals and reports.

G. Owner's Project Requirements: A document written by Owner, Architect, or Commissioning Authority that details the functional requirements of a project and the expectations of how it will be used and operated, including Project goals, measurable performance criteria, cost considerations, benchmarks, success criteria, and supporting information.

H. Owner's Witness: Commissioning Authority, Owner's Project Manager, or Architect-designated witness authorized to authenticate test demonstration data and to sign completed test data forms.

I. "Systems," "Assemblies," "Subsystems," "Equipment," and "Components": Where these terms are used together or separately, they shall mean "as-built" systems, assemblies, subsystems, equipment, and components.

J. Test: Performance tests, performance test demonstrations, commissioning tests, and commissioning test demonstrations.

K. Sampling Procedures and Tables for Inspection by Attributes: As defined in ASQ Z1.4.

1.4 COMPENSATION

A. Should Architect, Commissioning Authority, other Owner's witness, or Owner's staff perform additional services or incur additional expenses due to actions of Contractor listed below, compensate Owner for such additional services and expenses.

1. Failure to provide timely notice of commissioning activities schedule changes.
2. Failure to meet acceptance criteria for test demonstrations.

B. Contractor shall compensate Owner for such additional services and expenses at the rate of $175.00 per labor hour plus the current per mile rate for personnel travelling plus per diem allowances for meals and lodging according to current U.S. General Services Administration (GSA) Per Diem Rates.

1.5 COMMISSIONING TEAM

A. Members Appointed by Contractor(s):

1. Commissioning Coordinator: A person or entity employed by Contractor to manage, schedule, and coordinate commissioning.
2. Project superintendent and other employees that Contractor may deem appropriate for a particular portion of the commissioning.
3. Subcontractors, installers, suppliers, and specialists that Contractor may deem appropriate for a particular portion of the commissioning.
4. Appointed team members shall have the authority to act on behalf of the entity they represent.

B. Members Appointed by Owner:

1. Commissioning Authority, plus consultants that Commissioning Authority may deem appropriate for a particular portion of the commissioning.

2. Owner representative(s), facility operations and maintenance personnel, plus other employees, separate contractors, and consultants that Owner may deem appropriate for a particular portion of the commissioning.

3. Architect / Engineer, plus employees and consultants that Architect may deem appropriate for a particular portion of the commissioning.

1.6 SUBMITTALS

A. Comply with requirements in Section 013300 "Submittal Procedures" for submittal procedures general requirements for commissioning.

B. Commissioning Plan Information:

1. List of Contractor-appointed commissioning team members to include specific personnel and subcontractors to the performance of the various commissioning requirements.

2. Schedule of commissioning activities, integrated with the construction schedule. Comply with requirements in Section 013200 "Construction Progress Documentation" for construction schedule general requirements for commissioning.

3. Contractor personnel and subcontractors to participate in each test.

4. List of instrumentation required for each test to include identification of parties that will provide instrumentation for each test.

C. Commissioning Coordinator Letter of Authority:

1. Within 10 days after approval of Commissioning Coordinator qualifications, submit a letter of authority for Commissioning Coordinator, signed by a principal of Contractor's firm. Letter shall authorize Commissioning Coordinator to do the following:

a. Make inspections required for commissioning.
b. Coordinate, schedule, and manage commissioning of Contractor, subcontractors, and suppliers.
c. Obtain documentation required for commissioning from Contractor, subcontractors, and suppliers.
d. Report issues, delayed resolution of issues, schedule conflicts, and lack of cooperation or expertise on the part of members of the commissioning team.

D. Commissioning Coordinator Qualification Data: For entity coordinating Contractor's commissioning activities to demonstrate their capabilities and experience.

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

E. Commissioning schedule.

F. Two-week look-ahead schedules.

G. List test instrumentation, equipment, and monitoring devices. Include the following information:

1. Make, model, serial number, and application for each instrument, equipment, and monitoring device.

2. Brief description of intended use.

3. Calibration record showing the following:

a. Calibration agency, including name and contact information.
b. Last date of calibration.
c. Range of values for which calibration is valid.
d. Certification of accuracy.
e. N.I.S.T. traceability certification for calibration equipment.
f. Due date of the next calibration.

H. Construction Checklists:

1. Material checks.
2. Installation checks.
3. Startup procedures, where required.

I. Test Reports:

1. Pre-Startup Report: Prior to start up of equipment or a system, submit signed, completed construction checklists.

2. Test Data Reports: At the end of each day in which tests are conducted, submit test data for tests performed.

3. Commissioning Issues Reports: Daily, at the end of each day in which tests are conducted, submit commissioning issue reports for tests for which acceptable results were not achieved.

4. Weekly Progress Report: Weekly, at the end of each week in which tests are conducted, submit a progress report.

5. Data Trend Logs: Submit data trend logs at the end of the trend log period.

6. System Alarm Logs: Daily, at the start of days following a day in which tests were performed, submit print-out of log of alarms that occurred since the last log was printed.

1.7 CLOSEOUT SUBMITTALS

A. Commissioning Report:

1. At Construction Phase Commissioning Completion, include the following:

a. Pre-startup reports.

b. Approved test procedures.
c. Test data forms, completed and signed.
d. Progress reports.
e. Commissioning issues report log.
f. Commissioning issues reports showing resolution of issues.
g. Correspondence or other documents related to resolution of issues.
h. Other reports required by commissioning.
i. List unresolved issues and reasons they remain unresolved and should be exempted from the requirements for Construction Phase Commissioning Completion.
j. Report shall include commissioning work of Contractor.

B. Request for Certificate of Construction Phase Commissioning Completion.

C. Operation and Maintenance Data: For proprietary test equipment, instrumentation, and tools to include in operation and maintenance manuals.

1.8 QUALITY ASSURANCE

A. Commissioning Coordinator Qualifications:

1. Certification of commissioning process expertise. The following certifications are acceptable upon receipt of information demonstrating that certification is current and in good standing. Owner reserves the right to accept or reject other certifications as evidence of qualification.

   a. Certified Commissioning Professional, by Building Commissioning Association.
   b. Certified Building Commissioning Professional, by Association of Energy Engineers.
   c. Existing Building Commissioning Professional, by Association of Energy Engineers.
   d. Commissioning Process Management Professional, by American Society of Heating, Refrigerating and Air-Conditioning Engineers.
   e. Accredited Commissioning Process Authority Professional, by University of Wisconsin.
   f. Accredited Commissioning Process Manager, by University of Wisconsin.
   g. Accredited Green Commissioning Process Provider, by University of Wisconsin.

2. Absent one of the certifications above, provide documented experience on at least three projects of similar scope and complexity commissioning systems of similar complexity to those contained in these documents. Provide written references from the lead Commissioning Authority of each project attesting to applicant experience, responsibilities, and proven capabilities in regards to commissioning being equal to those required to gain one of the listed certifications. Each reference must be certified in accordance with the above requirements.

B. Calibration Agency Qualifications: Certified by The American Association of Laboratory Accreditation that the calibration agency complies with minimum requirements of ISO/IEC 17025.

1.9 COMMISSIONING AUTHORITY'S RESPONSIBILITIES

A. Commissioning Authority Responsibilities: Comply with requirements in Section 011200 "Summary of Multiple Contracts."

PART 2 - PRODUCTS

2.1 TEST EQUIPMENT, INSTRUMENTATION, AND TOOLS

A. Test equipment and instrumentation required to perform the commissioning shall remain the property of Contractor unless otherwise indicated.

B. Test equipment and instrumentation required to perform commissioning shall comply with the following criteria:

1. Be manufactured for the purpose of testing and measuring tests for which they are being used and have an accuracy to test and measure system performance within the tolerances required to determine acceptable performance.

2. Calibrated and certified.

   a. Calibration performed and documented by a qualified calibration agency according to national standards applicable to the tools and instrumentation being calibrated. Calibration shall be current according to national standards or within test equipment and instrumentation manufacturer's recommended intervals, whichever is more frequent, but not less than within six months of initial use on Project. Calibration tags permanently affixed.

   b. Repair and recalibrate test equipment and instrumentation if dismantled, dropped, or damaged since last calibrated.

3. Maintain test equipment and instrumentation.

4. Use test equipment and instrumentation only for testing or monitoring Work for which they are designed.

2.2 PROPRIETARY TEST EQUIPMENT, INSTRUMENTATION, AND TOOLS

A. Proprietary test equipment, instrumentation, and tools are those manufactured or prescribed by tested equipment manufacturer and required for work on its equipment as a condition of equipment warranty, or as otherwise required to service, repair, adjust, calibrate, or perform work on its equipment.

1. Identify proprietary test equipment, instrumentation, and tools required in the test equipment identification list submittal.
2. Proprietary test equipment, instrumentation, and tools shall become the property of Owner at Substantial Completion.

2.3 REPORT FORMAT AND ORGANIZATION

A. General Format and Organization:

1. Record report on compact disk.
2. Electronic Data: Portable document format (PDF); a single file with outline-organized bookmarks for major and minor tabs and tab contents itemized for specific reports.

B. Commissioning Report:

1. Include a table of contents and an index to each test.

2. Include major tabs for each Specification Section.

3. Include minor tabs for each test.

4. Within each minor tab, include the following:

a. Test specification.

b. Pre-startup reports.

c. Approved test procedures.

d. Test data forms, completed and signed.

e. Commissioning issue reports, showing resolution of issues, and documentation related to resolution of issues pertaining to a single test. Group data forms, commissioning issue reports showing resolution of issues, and documentation related to resolution of issues for each test repetition together within the minor tab, in reverse chronological order (most recent on top).

PART 3 - EXECUTION

3.1 PREPARATION

A. Review preliminary construction checklists and preliminary test procedures and data forms.

3.2 CONSTRUCTION CHECKLISTS

A. Construction checklists cannot modify or conflict with the Contract Documents.

B. Create construction checklists based on actual systems and equipment to be included in Project.

C. Material Checks: Compare specified characteristics and approved submittals with materials as received. Include factory tests and other evaluations, adjustments, and tests performed prior to shipment, if applicable.

1. Services connection requirements, including configuration, size, location, and other pertinent characteristics.

2. Included optional features.

3. Delivery Receipt Check: Inspect and record physical condition of materials and equipment on delivery to Project site, including agreement with approved submittals, cleanliness and lack of damage.

D. Installation Checklists: must in general document that equipment and systems are installed and started in accordance with the contract document requirements. See attachment #1 for sample checklists for a small group of representative equipment. Develop checklists in similar format with line items required designed to insure proper installation by installers:

1. Location according to Drawings and approved Shop Drawings.

2. Configuration.

3. Compliance with manufacturers' written installation instructions.

4. Attachment to structure.

5. Access clearance to allow for maintenance, service, repair, removal, and replacement without the need to disassemble or remove other equipment or building elements. Access coordinated with other building elements and equipment, including, but not limited to, ceiling and wall access panels, in a manner consistent with OSHA fall-protection regulations and safe work practices.

6. Utility connections are of the correct characteristics, as applicable.

7. Correct labeling and identification.

E. Startup Checks: Verify readiness of equipment to be energized. Include manufacturer's standard startup procedures and forms.

F. Startup: Perform and document initial operation of equipment to prove that it is installed properly and operates as intended according to manufacturer's standard startup procedures, minimum.

G. Performance Tests:

1. Static Tests: As specified elsewhere, including, but not limited to, duct and pipe leakage tests, insulation-resistance tests, and water-penetration tests.
2. Component Performance Tests: Tests evaluate the performance of an input or output of components under a full range of operating conditions.
3. Equipment and Assembly Performance Tests: Test and evaluate performance of equipment and assemblies under a full range of operating conditions and loads.
4. System Performance Tests: Test and evaluate performance of systems under a full range of operating conditions and loads.
5. Intersystem Performance Tests: Test and evaluate the interface of different systems under a full range of operating conditions and loads.

H. Deferred Construction Checklists: Obtain Owner approval of proposed deferral of construction checklists, including proposed schedule of completion of each deferred construction checklist, before submitting request for Certificate of Construction Phase Commissioning Completion. When approved, deferred construction checklists may be completed after date of Construction Phase Commissioning Completion. Include the following in request for Certificate of Construction Phase Commissioning Completion:

1. Identify deferred construction checklists by number and title.
2. Provide a target schedule for completion of deferred construction checklists.
3. Written approval of proposed deferred construction checklists, including approved schedule of completion of each deferred construction checklist.

I. Delayed Construction Checklists: Obtain Owner approval of proposed delayed construction checklists, including proposed schedule of completion of each delayed construction checklist, before submitting request for Certificate of Construction Phase Commissioning Completion. When approved, delayed construction checklists may be completed after date of Construction Phase Commissioning Completion. Include the following in request for Certificate of Construction Phase Commissioning Completion:

1. Identify delayed construction checklist by construction checklist number and title.
2. Provide a target schedule for completion of delayed construction checklists.
3. Written approval of proposed delayed construction checklists, including approved schedule of completion of each delayed construction checklist.

3.3 GENERAL EXECUTION REQUIREMENTS

A. Schedule and coordinate commissioning with the construction schedule.

B. Perform activities identified in construction checklists, including tests, and document results of actions as construction proceeds.

C. Perform test demonstrations for Owner's witness. Unless otherwise indicated in specific testing requirements, demonstrate tests for 100 percent of work to which the test applies.

D. Report test data and commissioning issue resolutions.

E. Schedule personnel to participate in and perform Commissioning-Process Work.

F. Installing contractors' commissioning responsibilities include, but are not limited to, the following:

1. Operating the equipment and systems they install during tests.
2. In addition, installing contractors may be required to assist in tests of equipment and systems with which their work interfaces.

3.4 COMMISSIONING COORDINATOR RESPONSIBILITIES

A. Management and Coordination: Manage, schedule, and coordinate commissioning, including, but not limited to, the following:

1. Coordinate with subcontractors on their commissioning responsibilities and activities.

2. Obtain, assemble, and submit commissioning documentation.

3. Attend periodic on-site commissioning meetings. Comply with requirements in Section 01 31 00 "Project Management and Coordination."

4. Develop and maintain the commissioning schedule. Integrate commissioning schedule into the construction schedule. Update schedule at specified intervals.

5. Review and comment on preliminary test procedures and data forms.

6. Report inconsistencies and issues in system operations.

7. Verify that tests have been completed and results comply with acceptance criteria, and that equipment and systems are ready before scheduling test demonstrations.

8. Direct and coordinate test demonstrations.

9. Coordinate witnessing of test demonstrations by Owner's witness.

10. Coordinate and manage training. Be present during training sessions to direct video recording, present training and direct the training presentations of others. Comply with requirements in Section 017900 "Demonstration and Training."

11. Prepare and submit specified commissioning reports.

12. Track commissioning issues until resolution and retesting is successfully completed.

13. Retain original records of Commissioning-Process Work, organized as required for the commissioning report. Provide Owner's representative access to these records on request.

14. Assemble and submit commissioning report.

3.5 COMMISSIONING TESTING

A. Quality Control: Construction checklists, including tests, are quality-control tools designed to improve the functional quality of Project. Test demonstrations evaluate the effectiveness of Contractor's quality-control process.

B. Owner's witness will be present to witness commissioning work requiring the signature of an owner's witness, including, but not limited to, test demonstrations. Owner's project manager will coordinate attendance by Owner's witness with Contractor's published commissioning schedule. Owner's witness will provide no labor or materials in the commissioning work. The only function of Owner's witness will be to observe and comment on the progress, completion, and results of commissioning.

C. Construction Checklists:

1. Complete construction checklists as Work is completed.

2. Distribute construction checklists to installers before they start work.

3. Installers:

   a. Verify installation using approved construction checklists as Work proceeds.
   b. Complete and sign construction checklists daily for work performed during the preceding day.

4. Provide Commissioning Authority access to construction checklists.

D. Installation Compliance Issues: Record as an installation compliance issue Work found to be incomplete, inaccessible, at variance with the Contract Documents, nonfunctional, or that does not comply with construction checklists. Record installation compliance issues on the construction checklist at the time they are identified. Record corrective action and how future Work should be modified before signing off the construction checklist.

E. Pre-Startup Audit: Prior to executing startup procedures, review completed installation checks to determine readiness for startup and operation. Report conditions, which, if left uncorrected, adversely impact the ability of systems or equipment to operate satisfactorily or to comply with acceptance criteria. Prepare pre-startup report for each system.

F. Test Procedures and Test Data Forms:

1. Test procedures shall define the step-by-step procedures to be used to execute tests and test demonstrations.

2. Test procedures shall be specific to the make, model, and application of the equipment and systems being tested.

3. Completed test data forms are the official records of the results of tests.

4. Commissioning Authority will provide to Contractor preliminary test procedures and test data forms for performance tests and commissioning tests after approval of Product Data, Shop Drawings, and preliminary operation and maintenance manual. Test procedures will in general be designed to demonstrate that operating characteristics conform to any or all required and / or approved performance characteristics.

5. Review preliminary test procedures and test data forms and provide comments within 14 days of receipt from Commissioning Authority. Review shall address the following:

   a. Equipment protection and warranty issues, including, but not limited to, manufacturers' installation and startup recommendations, and operation and maintenance instructions.

b. Applicability of the procedure to the specific software, equipment, and systems approved for installation.

6. After Contractor has reviewed and commented on the preliminary test procedures and test data forms, Commissioning Authority will revise and reissue the approved revised test procedures and test data forms marked "Approved for Testing."

7. Use only approved test procedures and test data forms marked "Approved for Testing" to perform and document tests and test demonstrations.

G. Performance of Tests:

1. The sampling rate for tests is 100 percent. The sampling rate for test demonstrations is 100 percent unless otherwise indicated.

2. Perform and complete each step of the approved test procedures in the order listed.

3. Record data observed during performance of tests on approved data forms at the time of test performance and when the results are observed.

4. Record test results that are not within the range of acceptable results on commissioning issue report forms in addition to recording the results on approved test procedures and data forms according to the "Commissioning Compliance Issues" Paragraph in this Article.

5. On completion of a test, sign the completed test procedure and data form. Tests for which test procedures and data forms are incomplete, not signed, or which indicate performance that does not comply with acceptance criteria will be rejected. Tests for which test procedures and data forms are rejected shall be repeated and results resubmitted.

H. Performance of Test Demonstration:

1. Perform test demonstrations on a sample of tests after test data submittals are approved. The sampling rate for test demonstrations shall be 100 percent of components which are not typical of at least 10, and shall be 25% of components which are typical of at least 10, unless otherwise indicated in the individual test specification.

2. Notify Owner's witness at least seven days in advance of each test demonstration.

3. Perform and complete each step of the approved test procedures in the order listed.

4. Record data observed during performance of test demonstrations on approved data forms at the time of demonstration and when the results are observed.

5. Provide full access to Owner's witness to directly observe the performance of all aspects of system response during the test demonstration. On completion of a test demonstration, sign the completed data form and obtain signature of Owner's witness at the time of the test to authenticate the reported results.

6. Test demonstration data forms not signed by Contractor and Owner's witness at the time of the completion of the procedure will be rejected. Test demonstrations for which data forms are rejected shall be repeated and results shall be resubmitted.

    a. Exception for Failure of Owner's Witness to Attend: Failure of Owner's witness to be present for agreed-on schedule of test demonstration shall not delay Contractor. If Owner's witness fails to attend a scheduled test, Contractor shall proceed with the scheduled test. On completion, Contractor shall sign the data form for Contractor and for Owner's witness, and shall note the absence of Owner's witness at the scheduled time and place.

7. False load test requirements are specified in related sections.

    a. Where false load testing is specified, provide temporary equipment, power, controls, wiring, piping, valves, and other necessary equipment and connections required to apply the specified load to the system. False load system shall be capable of steady-state operation and modulation at the level of load specified. Equipment and systems permanently installed in this work shall not be used to create the false load without Architect's written approval.

I. Deferred Tests:

1. Deferred Tests List: Identify, in the request for Certificate of Construction Phase Commissioning Completion, proposed deferred tests or other tests approved for deferral until specified seasonal or other conditions are available. When approved, deferred tests may be completed after the date of Construction Phase Commissioning Completion. Identify proposed deferred tests in the request for Certificate of Construction Phase Commissioning Completion as follows:

    a. Identify deferred tests by number and title.
    b. Provide a target schedule for completion of deferred tests.

2. Schedule and coordinate deferred tests. Schedule deferred tests when specified conditions are available. Notify Architect and Commissioning Authority at least seven calendar days (minimum) in advance of tests.
3. Where deferred tests are specified, coordinate participation of necessary personnel and of Architect, Commissioning Authority, and Owner's witness. Schedule deferred tests to minimize occupant and facility impact. Obtain Architect's approval of the proposed schedule.

J. Delayed Tests:

1. Delayed Tests List: Identify, in the request for Certificate of Construction Phase Commissioning Completion, proposed delayed tests. Obtain Owner approval of proposed delayed tests, including proposed schedule of completion of each delayed test, before submitting request for Certificate of Construction Phase Commissioning Completion. Include the following in the request for Certificate of Construction Phase Commissioning Completion:

a. Identify delayed tests by test number and title.
b. Written approval of proposed delayed tests, including approved schedule of completion of delayed tests.

2. Schedule and coordinate delayed tests. Schedule delayed tests when conditions that caused the delay have been rectified. Notify Architect and Commissioning Authority at least seven calendar days (minimum) in advance of tests.

3. Where delayed tests are approved, coordinate participation of necessary personnel and of Architect, Commissioning Authority, and Owner's witness. Schedule delayed tests to minimize occupant and facility impact. Obtain Architect's approval of the proposed schedule.

K. Commissioning Compliance Issues:

1. Test results that are not within the range of acceptable results are commissioning compliance issues.

2. Track and report commissioning compliance issues until resolution and retesting are successfully completed.

3. If a test demonstration fails, determine the cause of failure. Direct timely resolution of issue and then repeat the demonstration. If a test demonstration must be repeated due to failure caused by Contractor work or materials, reimburse Owner for billed costs for the participation in the repeated demonstration.

4. Test Results: If a test demonstration fails to meet the acceptance criteria, perform the following:

a. Complete a commissioning compliance issue report form promptly on discovery of test results that do not comply with acceptance criteria.
b. Submit commissioning compliance issue report form within 24 hours of the test.
c. Determine the cause of the failure.
d. Establish responsibility for corrective action if the failure is due to conditions found to be Contractor's responsibility.

5. Commissioning Compliance Issue Report: Provide a commissioning compliance issue report for each issue. Do not report multiple issues on the same commissioning compliance issue report.

a. Exception: If an entire class of devices is determined to exhibit the identical issue, they may be reported on a single commissioning compliance issue report. (For example, if all return-air damper actuators that are specified to fail to the open position are found to fail to the closed position, they may be reported on a single commissioning issue report. If a single commissioning issue report is used for multiple commissioning compliance issues, each device shall be identified in the report, and the total number of devices at issue shall be identified.

b. Complete and submit Part 1 of the commissioning compliance issue report immediately when the condition is observed.

c. Record the commissioning compliance issue report number and describe the deficient condition on the data form.

d. Resolve commissioning compliance issues promptly. Complete and submit Part 2 of the commissioning compliance issue report when issues are resolved.

6. Diagnose and correct failed test demonstrations as follows:

a. Perform diagnostic tests and activities required to determine the fundamental cause of issues observed.
b. Record each step of the diagnostic procedure prior to performing the procedure. Update written procedure as changes become necessary.
c. Record the results of each step of the diagnostic procedure.
d. Record the conclusion of the diagnostic procedure on the fundamental cause of the issue.
e. Determine and record corrective measures.
f. Include diagnosis of fundamental cause of issues in commissioning compliance issue report.

7. Retest:

a. Schedule and repeat the complete test procedure for each test demonstration for which acceptable results are not achieved. Obtain signature of Owner's witness on retest data forms. Repeat test demonstration until acceptable results are achieved. Except for issues that are determined to result from design errors or omissions, or other conditions beyond Contractor's responsibility, compensate Owner for direct costs incurred as the result of repeated test demonstrations to achieve acceptable results.

b. For each repeated test demonstration, submit a new test data form, marked "Retest."

8. Do not correct commissioning compliance issues during test demonstrations.

a. Exceptions will be allowed if the cause of the issue is obvious and resolution can be completed in less than five minutes. If corrections are made under this exception, note the deficient conditions on the test data form and issue a commissioning compliance issue report. A new test data form, marked "Retest," shall be initiated after the resolution has been completed.

3.6 COMMISSIONING MEETINGS

A. Commissioning Authority will schedule and conduct commissioning meetings. Comply with requirements in Section 013100 "Project Management and Coordination."

3.7 SEQUENCING

A. Sequencing of Commissioning Verification Activities: For a particular material, item of equipment, assembly, or system, perform the following in the order listed unless otherwise indicated:

1. Construction Checklists:

   a. Material checks.

   b. Installation checks.

   c. Start up, as appropriate. Some startup may depend on component performance. Such startup may follow component performance tests on which the startup depends.

   d. Performance Tests:

      1) Static tests, as appropriate.

      2) Component performance tests. Some component performance tests may depend on completion of startup. Such component performance tests may follow startup.

      3) Equipment and assembly performance tests.

      4) System performance tests.

      5) Intersystem performance tests.

2. Commissioning tests.

B. Before performing commissioning tests, verify that materials, equipment, assemblies, and systems are delivered, installed, started, and adjusted to perform according to construction checklists.

C. Verify readiness of materials, equipment, assemblies, and systems by performing tests prior to performing test demonstrations. Notify Architect if acceptable results cannot be achieved due to conditions beyond Contractor's control or responsibility.

D. Commence tests as soon as installation checks for materials, equipment, assemblies, or systems are satisfactorily completed. Tests of a particular system may proceed prior to completion of other systems, provided the incomplete work does not interfere with successful execution of test.

3.8 SCHEDULING

A. Commence commissioning as early in the construction period as possible.

B. Commissioning Schedule: Integrate commissioning into Contractor's construction schedule. See Section 01 32 00 "Construction Progress Documentation."

1. Include detailed commissioning activities in monthly updated Contractor's construction schedule and short interval schedule submittals.

2. Schedule the start date and duration for the following commissioning activities:

    a. Submittals.
    b. Preliminary operation and maintenance manual submittals.
    c. Installation checks.
    d. Startup, where required.
    e. Performance tests.
    f. Performance test demonstrations.
    g. Commissioning tests.
    h. Commissioning test demonstrations.

3. Schedule shall include a line item for each installation check, startup, and test activity specific to the equipment or systems involved.

4. Determine milestones and prerequisites for commissioning. Show commissioning milestones, prerequisites, and dependencies in monthly updated critical-path-method construction schedule and short interval schedule submittals.

C. Two-Week Look-Ahead Commissioning Schedule:

1. Two weeks prior to the beginning of tests, submit a detailed two-week look-ahead schedule. Thereafter, submit updated two-week look-ahead schedules weekly for the duration of commissioning.

2. Two-week look-ahead schedules shall identify the date, time, beginning location, Contractor personnel required, and anticipated duration for each startup or test activity.

3. Use two-week look-ahead schedules to notify and coordinate participation of Owner's witnesses.

D. Owner's Witness Coordination:

1. Coordinate Owner's witness participation via Architect.
2. Notify Architect of commissioning schedule changes at least two work days in advance for activities requiring the participation of Owner's witness.

3.9 COMMISSIONING REPORTS

A. Test Reports:

1. Pre-startup reports include observations of the conditions of installation, organized into the following sections:

    a. Equipment Model Verification: Compare contract requirements, approved submittals, and provided equipment. Note inconsistencies.

b. Preinstallation Physical Condition Checks: Observe physical condition of equipment prior to installation. Note conditions including, but not limited to, physical damage, corrosion, water damage, or other contamination or dirt.

c. Preinstallation Component Verification Checks: Verify components supplied with the equipment, preinstalled or field installed, are correctly installed and functional. Verify external components required for proper operation of equipment correctly installed and functional. Note missing, improperly configured, improperly installed, or nonfunctional components.

d. Summary of Installation Compliance Issues and Corrective Actions: Identify installation compliance issues and the corrective actions for each. Verify that issues noted have been corrected.

e. Evaluation of System Readiness for Startup: For each item of equipment for each system for which startup is anticipated, document in summary form acceptable to Owner completion of equipment model verification, preinstallation physical condition checks, preinstallation component verification checks, and completion of corrective actions for installation compliance issues.

2. Test data reports include the following:

a. "As-tested" system configuration. Complete record of conditions under which the test was performed, including, but not limited to, the status of equipment, systems, and assemblies; temporary adjustments and settings; and ambient conditions.

b. Data and observations, including, but not limited to, data trend logs, recorded during the tests.

c. Signatures of individuals performing and witnessing tests.

d. Data trend logs accumulated overnight from the previous day of testing.

3. Commissioning Compliance Issues Reports: Report as commissioning compliance issues results of tests and test demonstrations that do not comply with acceptance criteria. Report only one issue per commissioning compliance issue report. Use sequentially numbered facsimiles of commissioning compliance issue report form included in this Section, or other form approved by Owner. Distribute commissioning compliance issue reports to parties responsible for taking corrective action. Identify the following:

a. Commissioning compliance issue report number. Assign unique, sequential numbers to individual commissioning compliance issue reports when they are created, to be used for tracking.

b. Action distribution list.

c. Report date.

d. Test number and description.

e. Equipment identification and location.

f. Briefly describe observations about the performance associated with failure to achieve acceptable results. Identify the cause of failure if apparent.

g. Diagnostic procedure or plan to determine the cause (include in initial submittal).

h. Diagnosis of fundamental cause of issues as specified below (include in resubmittal).

i. Fundamental cause of unacceptable performance as determined by diagnostic tests and activities.

j. When issues have been resolved, update and resubmit the commissioning issue report forms by completing Part 2. Identify resolution taken and the dates and initials of the persons making the entries.

k. Schedule for retesting.

4. Weekly progress reports include information for tests conducted since the preceding report and the following:

a. Completed data forms.
b. Equipment or system tested, including test number, system or equipment tag number and location, and notation about the apparent acceptability of results.
c. Activities scheduled but not conducted per schedule.
d. Commissioning compliance issue report log.
e. Schedule changes for remaining Commissioning-Process Work, if any.

5. Data trend logs shall be initiated and running prior to the time scheduled for the test demonstration.

a. Trend log data format shall be multiple data series graphs. Where multiple data series are trend logged concurrently, present the data on a common horizontal time axis. Individual data series may be presented on a segmented vertical axis to avoid interference of one data series with another, and to accommodate different axis scale values. Graphs shall be sufficiently clear to interpret data within the accuracy required by the acceptance criteria.

b. Attach to the data form printed trend log data collected during the test or test demonstration.

c. Record, print out, and attach to the data form operator activity during the time the trend log is running. During the time the trend log is running, operator intervention not directed by the test procedure invalidates the test results.

6. System Alarm Logs: Record and print out a log of alarms that occurred since the last log was printed. Evaluate alarms to determine if the previous day's work resulted in any conditions that are not considered "normal operation."

a. Conditions that are not considered "normal operation" shall be reported on a commissioning issue report attached to the alarm log. Resolve as necessary. The intent of this requirement is to discover control system points or sequences left in manual or disabled conditions, equipment left disconnected, set points left with abnormal values, or similar conditions that may have resulted from failure to fully restore systems to normal, automatic control after test completion.

3.10 CERTIFICATE OF CONSTRUCTION PHASE COMMISSIONING COMPLETION

A. When Contractor considers that construction phase commissioning, or a portion thereof which Owner agrees to accept separately, is complete, Contractor shall prepare and submit to Owner and Commissioning Authority through Architect a comprehensive list of items to be completed or corrected. Failure to include an item on such list does not alter Contractor's responsibility to compete commissioning.

B. On receipt of Contractor's list, Commissioning Authority will make an inspection to determine whether the construction phase commissioning or designated portion thereof is complete. If Commissioning Authority's inspection discloses items, whether or not included on Contractor's list, which are not sufficiently complete as defined in "Construction Phase Commissioning Completion" Paragraph in the "Definitions" Article, Contractor shall, before issuance of the Certificate of Construction Phase Completion, complete or correct such items on notification by Commissioning Authority. In such case, Contractor shall then submit a request for another inspection by Commissioning Authority to determine construction phase commissioning completion.

C. Contractor shall promptly correct deficient conditions and issues discovered during commissioning. Costs of correcting such deficient conditions and issues, including additional testing and inspections, the cost of uncovering and replacement, and compensation for Architect's and Commissioning Authority's services and expenses made necessary thereby, shall be at Contractor's expense.

D. When construction phase commissioning or designated portion is complete, Commissioning Authority will prepare a Certificate of Construction Phase Commissioning that shall establish the date of completion of construction phase commissioning. Certificate of Construction Phase Commissioning Completion shall be submitted prior to requesting inspection for determining date of Substantial Completion.

END OF SECTION 01 08 00

SECTION 01 10 00 - SUMMARY OF WORK

A. GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Project Identification: Project consists of renovations to the Wallkill Senior High School, John G. Borden Middle School, and Plattekill Elementary Schools, as shown on the contract drawings and described in the project manual.

B.

1. Project Locations:
   a. Project sites located at various locations at the Wallkill Central School District

      1) Wallkill Senior High School (High School)
      90 Robinson Drive
      Wallkill, NY 12589

      2) John G. Borden Middle School (Middle School)
      109 Bona Ventura Avenue
      Wallkill, NY 12589

      4) Plattekill Elementary School
      1270 Rt. 32
      Plattekill, NY 12568

2. Owner:
   Wallkill Central School District
   1500 Rt 208
   PO Box 310
   Wallkill, NY 12589

3. Architect:
   Tetra Tech Architects & Engineers
   Cornell Business and Technology Park
   10 Brown Rd.
   Ithaca, NY 14850

4. CM: Barone Construction Group, Inc.
   23 New Paltz Rd.
   Highland, NY 12528

C. The work includes alterations for various locations at the Wallkill Central School District.
   1. All materials, equipment and methods of construction shall comply with all the requirements of the latest edition of The New York State Building Code, and the regulations of NY State Education Department.
   2. The Specific work scheduled to be performed must be completed such that it will not impact/impede school egress when school is in session.

1.3 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General Conditions and Division 0 & 1 Specification Sections, apply to this Section.

1.4 THE CONTRACT

A. The Project will be constructed under a multiple prime contracting arrangement with the Owner awarding and holding the separate Contracts. Each contractor shall furnish all labor, material, tools, equipment, supervision, layout, delivery, trucking, shop drawings, submittals, storage etc. necessary to complete the work described in the Division of Work of their respective Contracts and based upon a complete set of Contract Documents.

B. Each Contractor has been given the opportunity prior to bid to inspect the entire Project sites for interferences to their Contract work and agrees to accept the sites as they exist on the date of the bid opening.
   1. It is the Owner's intention to continue to occupy the existing buildings and sites for normal School operations during the Construction process. The Contractors all agree to:

      a. Cooperate with the Owner’s personnel in maintaining and facilitating access to the school buildings and its facilities by the school staff, Students, Owner’s agents, service consultants and the public, throughout the construction process.

      b. Keep driveways and entrances serving the occupied School buildings clear and available to the Owner, the Owner’s employees, the public and to emergency vehicles at all times. Do not obstruct access to or use these areas for parking or staging of equipment or materials. All access through these existing areas must be coordinated in advance and in accordance with the Owner’s usage and occupancy schedule.

      c. Schedule construction operations to minimize any conflicts or interruptions to the daily school functions. Coordinate any necessary interruptions with the designated project representative.

      d. All existing Owner-occupied buildings (not turned over to the Project Contractors) need to remain operational at all times. The contractors are responsible to maintain all systems, such as but not limited to fire alarm, clocks, electric, public address system, gas service, heat, plumbing etc.

C. Each Prime Contractor shall:
   1. Prohibit tobacco, alcohol, illegal drug and firearm possession and use by their employees while on site.
   2. Prohibit conduct which materially and substantially interferes with the educational process, including the use of obscene and profane language and gestures.
   3. Coordinate construction schedule information to formulate one master schedule for the entire Project.
   4. Provide adequate temporary restroom facilities for its own employees.
   5. Provide potable drinking water for its own employees.
   6. Provide access to all concealed systems as required for system maintenance and repair for items installed in their Prime Contract.
   7. Provide and maintain material lifting equipment required for the completion of their Contract requirements, and complying with NYS Labor Laws, OSHA Regulations, and other Federal, State, and local laws.
   8. Provide and maintain additional temporary stairs, ladders, ramps, scaffolding, and platforms required specifically for completion of work of their own Contract, and as further detailed in this section. All work needs to comply with the NYS Labor Laws, OSHA regulation, and other Federal, State, and local laws.

9. Provide Fire Prevention materials and equipment for fire protection related to the work of their own Prime Contract. Provide fire extinguishers, fire blankets, and fire watch during all cutting and welding operations.
10. Provide any supplemental lighting required to install the work of its own Contract, beyond the minimum OSHA levels provided under the Electrical Work Prime Contract.
11. Provide traffic control for deliveries, and equipment needed to perform the work of their own Prime Contract.
12. Provide protection of its own finished Work, after installation, until accepted by the Owner.
13. Provide fire caulking for any penetration related to the work for its own Prime Contract.
14. Provide final cleaning per Spec Section 01 77 00.
15. Provide any office and storage trailers required to complete the work of their own Prime Contract. The location of the office and storage trailers will be determined by the Owner and the Construction Manager.
16. Provide for a thorough final cleaning of the site, building, and equipment provided under their Prime Contract immediately before the final inspection. Each Prime Contractor is responsible for cleaning and dust and debris generated from the work of their own Contract.
    a. Maintain areas in a cleaned condition until the Owner occupies the space.
    b. Personnel: Experienced workmen or professional cleaners.
17. All personnel shall have company issued ID badges (with picture and name) visible while working on site.
18. Provide OSHA 10 cards to Construction Manager for each employee working on site prior to starting work.
19. All personnel working on site shall be provided and wear correctly fitted, proper PPE (personal protective equipment) suitable for their tasks as necessary and per OSHA requirements.
20. All personnel working on site shall wear proper working attire.
21. Failure to provide requirements listed above could lead to personnel being removed from site.

1.5 SUMMARY OF WORK

A. The work will be constructed under multiple prime contracts. One set of contract documents is issued covering the multiple contracts. Each Prime Contract is defined as:

1. CONTRACT GC-1 General Work Contractor – High School
2. CONTRACT GC-2 General Work Contractor – Middle School
3. CONTRACT GC-3 General Work Contractor – Plattekill Elementary School
4. CONTRACT HVAC-1 Mechanical Work Contractor – Middle School and High School
5. CONTRACT EC-1 Electrical Work Contractor – High School
6. CONTRACT EC-2 Electrical Work Contractor – Middle School
7. CONTRACT PC-1 Plumbing Work Contractor- Middle School and High School

B. The owner will construct other projects generally concurrent with these contracts as follows. Cooperate fully with the separate contractors so work on those contracts may be carried out smoothly, without interfering with or delaying work under this contract or other contracts. Coordinate the work of this contract with the work performed under the separate contracts.

C. The following are furnished and installed contracts:
1. Senior High School Gymnasium Floor Reconstruction
2. Roofing Contractor 1- RC-4 Wallkill Senior High School
3. Roofing Contractor 2- RC-5 John G. Borden Middle School

D. The following are furnish only contracts (installation is by the specific primes called for in the contract documents)
1. HVAC Equipment - installed by the Mechanical Work Contractor HVAC-1

1.6 WORK UNDER SEPARATE CONTRACTS

A. The project will be constructed under a multiple-prime contracting arrangement.

B. One set of documents is issued covering all multiple prime contracts. Each prime contractor is to review ALL drawings and specifications for complete understanding and knowledge of the work.

C. The following Contract Documents are specifically included and defined as integral to each Prime Contract.

1. Bidding Requirements
2. Performance and Payment Bonds
3. Conditions of the Contract, including
   a. General Conditions & Supplementary Conditions
   b. Insurance Requirements
   c. NYS Prevailing Wage Rates.

D. Extent of Contract: Unless the Contract Documents contain a more specific description of the Work, names and terminology on Drawings and in Specification Sections determine which contract includes a specific element of Project.

1. Unless otherwise indicated, the Work described in this Section for each contract shall be complete systems and assemblies, including products, components, accessories, and installation required by the Contract Documents.
2. Concrete for the Work of each contract shall be provided by each contract for its own Work, unless specifically assigned to another Contract.
3. Provide all cutting & patching associated with the Work of its Prime Contract. All patching is to be performed by mechanics qualified and experienced with the materials and finishes being patched and hired by the responsible Prime Contractor.
4. Firestopping for the Work of each contract shall be provided by each contract for its own Work. Firestopping shall comply with Division 7 Section “Penetration Firestopping”

5. Access doors not shown on Architectural drawings and required for access to junction boxes, valves and similar equipment for the Work of each contract shall be furnished and installed by each contract for its own Work. All access doors shall comply with Division 8 Section “Access Doors and Frames.”
6. Lead Based Paint precautions for the Work of each contract shall be provided by each contract for its own Work. Each Prime Contractor shall provide procedures for OSHA Lead precautions.
7. Each Prime Contractor shall designate a full-time superintendent to supervise the work of the Prime Contractor, who shall always be present on the job site when work is being performed; this person shall be familiar with the Project and authorized to conclude matters relating to progress. This person shall also represent their company at weekly contractor meetings. The Owner, Construction Manager and Architect should be informed of the contractor’s designated personnel and approve of the person.
8. Termination and removal of its temporary facilities shall be provided by each contract for its own Work.

E. Temporary Facilities and Controls: In addition to specific responsibilities for temporary facilities and controls indicated in this Section and in Division 1 Section 01 50 00 "Temporary Facilities and Controls," each Contract is responsible for the following:
1. Installation, operation, maintenance, and removal of each temporary facility usually considered as its own normal construction activity, and costs and use charges associated with each facility
2. Generators, plug-in electric power cords and extension cords, supplementary plug-in task lighting, and special lighting necessary exclusively for its own activities.
3. Temporary heat for construction at isolated work areas.
4. Temporary enclosures for its own construction activities.
5. Hoisting requirements for its own construction activities.

6. Each Prime Contractor is to stockpile their debris on a daily basis and place it in their dumpster. Dumpsters will be provided by each Prime Contractor at each site as necessary. All Prime Contractors are responsible to remove their waste offsite. Waste disposal of asbestos containing materials will be by the General Work Contractor.
7. Secure lockup of its own tools, materials, and equipment.
8. Construction aids and miscellaneous services and facilities necessary exclusively for its own construction activities.
9. Safety procedures as dictated by the district, OSHA, and the NYS Department of Labor.
10. Safety and wayfinding signage.
11. Labor for daily clean-up.

1.7 GENERAL WORK CONTRACT - GC-1

A. The Work of the General Work Construction Contract includes but is not limited to, the following descriptions:

1. Renovations to locker rooms, bathrooms, ceiling, etc. Structural steel reinforcement for HVAC work, CMU, acoustical ceilings, ceramic tile, Painting drywall soffits, casework, and associated demolition work.
    a. Drawings
        1) General
        2) Code Compliance (AG Drawings)
        3) Architectural (AA Drawings)
        4) Structural (AS Drawings)
        5) Hazardous Materials (AHAZ Drawings)
2. Coordination:
    a. Coordination with the work of all the other contractors.
        1) Drawings
            a) All
3. NOT in Scope but coordination by this contract
    a. Roofing

4. Demolition:

    a. Asbestos containing material removal as shown in the contract documents and disposal per Code Rule 56. Follow all spec section as listed.
    b. Construction of hard barriers separating abatement areas from all other areas.
    c. Properly dispose of Hazardous & Special Waste as per spec section 020080 Asbestos Abatement Procedures
    d. Minor Demolition including but not limited to interior doors/frames/hardware, ceilings, interior walls and interior finishes.
    e. Removal and disposal of miscellaneous equipment including all existing wall mounted specialty items and/or equipment not shown if impacting work to be demolished.
    f. All cutting and patching necessary for work of this contract, including layout, sleeves, coring, debris removal, saw cuts, providing lintels, drywall work, grouting, painting, ceiling removal and replacement, etc.
    g. Prep opening to receive new work as described in the contract documents.
    h. Hard barrier as required by SED to separate workspaces from occupied space.

5. Temporary Facilities

    a. Provide and maintain dust protection.
    b. Provide and maintain continuous exits.
    c. Provide and maintain temporary heat and ventilation.
    d. Provide and maintain building safety and wayfinding signage.
    e. Provide and maintain Construction Manager’s field office.
    f. Provide and maintain enclosures and partitions.
    g. Provide and maintain secure building entrances during replacement of exterior doors and frames.

h. Provide Temporary Facilities indicated as Work of this Contract in Division 1 Section 01 50 00, “Temporary Facilities and Controls”

6. New Construction:
   a. Provide labor, material, and equipment to install cold formed metal framing
   b. Provide labor, material and equipment to install structural steel. Any removal of existing structural steel to perform work shall be removed in a safe manner and re-installed after completion of work. Coordination of work shall be performed with HVAC and Electrical Contractors.
   c. Provide labor, material and equipment to install new ceilings.
   d. Provide rough and finish carpentry.
   e. Provide thermal and moisture protection, other than roofing.
   f. Provide all finishes including: resilient vinyl tile, carpet, painting, suspended acoustical ceilings, LVT and ceramic tile.
   g. Contractor shall include painting for full wall of disturbed areas.
   h. Any areas disturbed during demo shall be repaired to like new.
   i. Contractor to build protection at each room that has a smart TV and projector.

7. General Requirements, including but not limited to, additional items specifically indicated as the Work of this Contract.
8. Provide multiple shift work as needed to complete work as shown on milestone schedule. Work during the month of July and August can be performed during first shift and if required to complete work during second shift. All work outside of that shall be performed during second shift. It is the contractor’s responsibility to include such shift work in their contract. The Owner will not be responsible for paying any cost associated with shift work. Contractors will be required to provide a detail schedule which will be approved by the Construction Manager for all shift work required prior to work commencing.
9. Provide for a thorough cleaning of the site and building (interior and exterior) immediately before final inspection.
   a. Maintain areas in a cleaned condition until the Owner occupies the space.
   b. Personnel: Experienced workman or professional cleaners.

B. The Work of the General Construction Contract includes but is not limited to the Work that is specified in the Project Manual(s) and as shown on the drawings that form the contract plans. The Contractor is directed to examine all drawings since certain details and/or notes may appear anywhere therein that apply to his/her particular work. This prime contract is defined as, and includes, all Sections in the Divisions indicated by reference, and specific Sections noted:

1. Division 1 –General Requirements, all Sections, including Temporary Facilities indicated.
2. Division 2 – Existing Conditions all Sections
3. Division 4- Masonry all sections
4. Division 5 – Metals, all Sections
5. Division 6 – Woods and Plastics, all Sections except for 061026 Roofing Rough Carpentry
6. Division 7 –Thermal and Moisture Protection, all Section, except 070150.19 Preparation for Re-roofing, 075750 Coated Foamed Roofing Restoration, and 077200 Roof Accessories
7. Division 8 – Openings, all Sections except 085113 Aluminum Windows
8. Division 9 – Finishes, all Sections except 096466 Wood Athletic Flooring
9. Division 10- Specialties, all sections
10. Division 12- Furnishings, all sections

1.8 GENERAL WORK CONTRACT - GC-2

A. The Work of the General Work Construction Contract includes but is not limited to, the following descriptions:

1. Renovations to locker rooms, bathrooms, ceiling, etc. Structural steel reinforcement for HVAC work, CMU, acoustical ceilings, ceramic tile, Painting drywall soffits, casework, and associated demolition work.
    a. Drawings
        1) General
        2) Code Compliance (BG Drawings)
        3) Architectural (BA Drawings)
        4) Structural (AB Drawings)
        5) Hazardous Materials (BHAZ Drawings)
2. Coordination:
    a. Coordination with the work of all the other contractors.
        1) Drawings
            a) All
3. NOT in Scope but coordination by this contract
    a. Roofing
4. Demolition:

    a. Asbestos containing material removal as shown in the contract documents and disposal per Code Rule 56. Follow all spec section as listed.
    b. Construction of hard barriers separating abatement areas from all other areas.
    c. Properly dispose of Hazardous & Special Waste as per spec section 020080 Asbestos Abatement Procedures
    d. Minor Demolition including but not limited to interior doors/frames/hardware, ceilings, interior walls and interior finishes.
    e. Removal and disposal of miscellaneous equipment including all existing wall mounted specialty items and/or equipment not shown if impacting work to be demolished.
    f. All cutting and patching necessary for work of this contract, including layout, sleeves, coring, debris removal, saw cuts, providing lintels, drywall work, grouting, painting, ceiling removal and replacement, etc.
    g. Prep opening to receive new work as described in the contract documents.
    h. Hard barrier as required by SED to separate workspaces from occupied space.

5. Temporary Facilities

    a. Provide and maintain dust protection.
    b. Provide and maintain continuous exits.
    c. Provide and maintain temporary heat and ventilation.
    d. Provide and maintain building safety and wayfinding signage.
    e. Provide and maintain Construction Manager’s field office.
    f. Provide and maintain enclosures and partitions.
    g. Provide and maintain secure building entrances during replacement of exterior doors and frames.
    h. Provide Temporary Facilities indicated as Work of this Contract in Division 1 Section 01 50 00, “Temporary Facilities and Controls”

6. New Construction:
    a. Provide labor, material, and equipment to install cold formed metal framing
    b. Provide labor, material and equipment to install structural steel. Any removal of existing structural steel to perform work shall be removed in a safe manner and re-installed after completion of work. Coordination of work shall be performed with HVAC and Electrical Contractors.
    c. Provide labor, material and equipment to install new ceilings.
    d. Provide rough and finish carpentry.
    e. Provide thermal and moisture protection, other than roofing.

f. Provide all finishes including: resilient vinyl tile, carpet, painting, suspended acoustical ceilings, LVT and ceramic tile.
g. Contractor shall include painting for full wall of disturbed areas.
h. Any areas disturbed during demo shall be repaired to like new.

7. General Requirements, including but not limited to, additional items specifically indicated as the Work of this Contract.
8. Provide multiple shift work as needed to complete work as shown on milestone schedule. Work during the month of July and August can be performed during first shift and if required to complete work during second shift. All work outside of that shall be performed during second shift. It is the contractor's responsibility to include such shift work in their contract. The Owner will not be responsible for paying any cost associated with shift work. Contractors will be required to provide a detail schedule which will be approved by the Construction Manager for all shift work required prior to work commencing.
9. Provide for a thorough cleaning of the site and building (interior and exterior) immediately before final inspection.
   a. Maintain areas in a cleaned condition until the Owner occupies the space.
   b. Personnel: Experienced workman or professional cleaners.

B. The Work of the General Construction Contract includes but is not limited to the Work that is specified in the Project Manual(s) and as shown on the drawings that form the contract plans. The Contractor is directed to examine all drawings since certain details and/or notes may appear anywhere therein that apply to his/her particular work. This prime contract is defined as, and includes, all Sections in the Divisions indicated by reference, and specific Sections noted:

1. Division 1 –General Requirements, all Sections, including Temporary Facilities indicated.
2. Division 2 – Existing Conditions all Sections
3. Division 4- Masonry all sections
4. Division 5 – Metals, all Sections
5. Division 6 – Woods and Plastics, all Sections except for 061026 Roofing Rough Carpentry
6. Division 7 –Thermal and Moisture Protection, all Section, except 070150.19 Preparation for Re-roofing, 075750 Coated Foamed Roofing Restoration, and 077200 Roof Accessories
7. Division 8 – Openings, all Sections except 085113 Aluminum Windows
8. Division 9 – Finishes, all Sections except 096466 Wood Athletic Flooring
9. Division 10- Specialties, all sections
10. Division 12- Furnishings, all sections

1.9 GENERAL WORK CONTRACT - GC-3

A. The Work of the General Work Construction Contract includes but is not limited to, the following descriptions:

1. Renovations to locker rooms, bathrooms, ceiling, etc. Structural steel reinforcement for HVAC work, CMU, acoustical ceilings, ceramic tile, Painting drywall soffits, casework, and associated demolition work.
   a. Drawings
      1) General
      2) Code Compliance (DG Drawings)
      3) Architectural (DA Drawings)

2. Demolition:

   a. Minor Demolition including but not limited to interior doors/frames/hardware, ceilings, interior walls and interior finishes.
   b. Removal and disposal of miscellaneous equipment including all existing wall mounted specialty items and/or equipment not shown if impacting work to be demolished.

c. All cutting and patching necessary for work of this contract, including layout, sleeves, coring, debris removal, saw cuts, providing lintels, drywall work, grouting, painting, ceiling removal and replacement, etc.
d. Prep opening to receive new work as described in the contract documents.
e. Hard barrier as required by SED to separate workspaces from occupied space.

3. Temporary Facilities

a. Provide and maintain dust protection.
b. Provide and maintain continuous exits.
c. Provide and maintain temporary heat and ventilation.
d. Provide and maintain building safety and wayfinding signage.
e. Provide and maintain Construction Manager's field office.
f. Provide and maintain enclosures and partitions.
g. Provide and maintain secure building entrances during replacement of exterior doors and frames.
h. Provide Temporary Facilities indicated as Work of this Contract in Division 1 Section 01 50 00, "Temporary Facilities and Controls"

4. New Construction:
a. Provide labor, material, and equipment to install cold formed metal framing and gypsum board.
b. Provide labor, material and equipment to repair/repoint masonry.
c. Provide labor, material and equipment for rough and finish carpentry for installation of windows.
d. Provide labor, material, and equipment Roller Shades.
e. Provide labor, material and equipment for ceiling work.
f. Provide labor, material and equipment for painting.
g. Repair any masonry due to damage during demolition.
h. Contractor shall include painting for full wall of disturbed areas.
i. Any areas disturbed during demo shall be repaired to like new.

5. General Requirements, including but not limited to, additional items specifically indicated as the Work of this Contract.
6. Provide multiple shift work as needed to complete work as shown on milestone schedule. Work during the month of July and August can be performed during first shift and if required to complete work during second shift. All work outside of that shall be performed during second shift. It is the contractor's responsibility to include such shift work in their contract. The Owner will not be responsible for paying any cost associated with shift work. Contractors will be required to provide a detail schedule which will be approved by the Construction Manager for all shift work required prior to work commencing.
7. Provide for a thorough cleaning of the site and building (interior and exterior) immediately before final inspection.
a. Maintain areas in a cleaned condition until the Owner occupies the space.
b. Personnel: Experienced workman or professional cleaners.

B. The Work of the General Construction Contract includes but is not limited to the Work that is specified in the Project Manual(s) and as shown on the drawings that form the contract plans. The Contractor is directed to examine all drawings since certain details and/or notes may appear anywhere therein that apply to his/her particular work. This prime contract is defined as, and includes, all Sections in the Divisions indicated by reference, and specific Sections noted:

1. Division 1 –General Requirements, all Sections, including Temporary Facilities indicated.
2. Division 2 – Existing Conditions all Sections
3. Division 4- Masonry- Section 04 01 20.19- Unit Masonry Restoration
4. Division 6 – Woods and Plastics, all Sections except for 061026 Roofing Rough Carpentry

5. Division 7 –Thermal and Moisture Protection, all Section, except 070150.19 Preparation for Re-roofing, 075750 Coated Foamed Roofing Restoration, and 077200 Roof Accessories
6. Division 8 – Openings, Sections 085113 Aluminum Windows
7. Division 9 – Finishes, except for 096466 Wood Athletic Flooring, 096566 Resilient athletic Flooring, 096623 Resinous Matrix Terrazzo Flooring, and 096000 High Performance Coating
8. Division 12- Furnishings, all sections

1.10 MECHANICAL WORK CONTRACTS - HVAC-1

A. Work of this Contract includes, but is not limited to, the following descriptions:

1. Includes HVAC Equipment, Piping, ductwork, control systems, plus other construction operations traditionally recognized as heating, ventilating and cooling work. This includes, but is not limited *to,* all work shown on the drawings, unless noted otherwise. It also includes Administrative and coordination responsibilities.
   a. Drawings
      1) Mechanical
2. Coordination:

   a. Coordination with the work of all the other contractors.
      1) Drawings
         a) All

3. Demolition

   a. Provide demolition of all HVAC equipment, controls, and piping as shown and as required per the Contract Documents.
   b. Removals and storage in a manner to re-install after work by others has been performed as per the Contract Documents.
   c. Provide Coordination with other trades. Specific coordination with the General Work Contractor, Roofing Contractor & Electrical Contractor.
   d. Removals shall be performed per the Milestone schedule
   e. Provide layout for Roofing Contractor and General Work Contractor to perform required removals.
   f. Roof penetrations. HVAC Contractor to locate all locations and sizes of equipment curbs. Provide mechanical equipment curbs to the Roofing Contractor. Roofing Contractor to provide all necessary penetrations, flashing and roofing.

4. Temporary Facilities
   a. Provide Temporary Facilities indicated as Work of this Contract in Division 1 Section 01 50 00, “Temporary Facilities and Controls”

5. Construction:

   a. Note that HVAC equipment will be provided under a separate contract as noted on the drawings. Delivery, storage, and Installation is by this contractor. Scheduling of delivery will be the responsibility of this contract and coordinated with the Construction Manager and the Commissioning company.
   b. Provide all work indicated on the contract drawings
   c. Provide and install all new hot water supply and return piping.
   d. Provide and install ductwork and associated components per the drawings and specs
   e. Install Air Handling Unit and Roof top units with heat recovery, unless otherwise noted.
   f. Provide and install all refrigerant piping and hydronic piping to all units
   g. Install unit heaters.
   h. Install remote condensing units.

i. Where called on drawings provide re-installation of unit ventilators and finned tube. Any damage during removals will be the responsibility of this contractor to repair/replace at their own cost.
j. Provide and install all insulation, painting and labeling of new and modified piping, ductwork and equipment.
k. Provide all controls and energy management systems. Coordinate with owners to provided required system.
l. Provide proper roofing supports and accessories for equipment on roof.
m. Provide all testing, adjusting and balancing of all new and existing modified HVAC systems.
n. All fees required for inspections and permits.
o. Provide support framing for HVAC equipment, e.g., mechanical equipment curbs.
p. Furnish access doors for HVAC access as indicated above (to be installed by GC)
q. Provide firestopping and sealing all HVAC penetrations
r. Furnish motor controllers/disconnects to Electrical Contractor for installation and wiring.
s. Provide owner training / commissioning of equipment and controls
t. All HVAC removals as shown and required for completion of the work.

6. General Requirements, including but not limited to, additional items specifically indicated as the Work of this Contract.
7. Provide multiple shift work as needed to complete work as shown on milestone schedule. All work will be phased per the milestone schedule. MC to provide a more detailed schedule. It is the contractor's responsibility to include such shift work in their contract. The owner will not be responsible for paying any cost associated with shift work. Contractors will be required to provide a detailed schedule which will be approved by the CM for all shift work required prior to work commencing. Shift work will not be required during summer break unless necessary to maintain the project schedule.

B. The Work of the Mechanical Work Contract includes but is not limited to the Work that is specified in the Project Manual(s) and as shown on the drawings that form the contract plans. The Contractor is directed to examine all plan drawings since certain details and/or notes may appear anywhere therein that apply to his/her particular work. This prime contract is defined as, and includes, all Sections in the Divisions indicated by reference, and specific Sections noted:

1. Division 1 –General Requirements all Sections, including Temporary Facilities indicated
2. Section 07 84 13, Penetration Firestopping, as required for the Work of this Contract
3. Section 07 84 43, Joint Firestopping, as required for the Work of this Contract
4. Section 07 92 00, Joint Sealants, as required for the Work of this Contract
5. Division 23 – Mechanical, all Sections

1.12 ELECTRICAL WORK CONTRACT - EC-1

A. Work of this Contract includes, but is not limited to, the following descriptions:

1. Includes interior and exterior Electrical Lighting, Electrical Panel and Equipment connections and other systems traditionally recognized as Electrical work. This includes but is not limited to, all work shown on the Drawings, unless noted otherwise. It also includes administrative and coordination responsibilities.
   a. Drawings
      1) Electrical (AE Drawings)

2. Coordination:

   a. Coordination with the work of all of the prime contractors.
      1) Drawings
         a) All

3. Demolition:
   a. Removal of items as shown and/or required.

b. Removal and disconnections of electrical devices in walls, ceilings, floors and site scheduled to be removed in portion of building and site where other work is being performed.
c. Coordinate with the Construction Manager for necessary shutdowns and removals. Minimum of 48-hour notice will be required for any shutdown so that it doesn't affect other trades or the school district's operations. Shutdown may be required to be performed during second shift or weekend.
d. Disconnect power to mechanical and plumbing equipment as required per the contract documents. Coordinate all work with HVAC Contractor.
e. All cutting and patching necessary for work of this contract, including layout, sleeves, coring, debris removal, saw cuts, lintels (furnish and install), drywall work, plaster work, grouting, painting, ceiling removal and replacement, etc.

4. Temporary Facilities
   a. Provide Temporary Facilities indicated as Work of this Contract in Division 1 Section 01 50 00, "Temporary Facilities and Controls"
   b. Provide and maintain temporary electric power and lighting.
   c. Provide and maintain electric and internet service to Construction Manager's field office.
   d. Provide and maintain fire alarm and security system during replacement of the entrance doors and frames.

5. New Construction:

   a. Provide ALL wiring to ALL HVAC equipment as indicated on the drawings
   b. Provide new lighting fixtures indicated on the contract documents.
   c. All existing and new wire shall be properly supported above the ceiling per the contract documents. This includes all wire that is currently sitting on the ceiling tile and grid in areas where ceilings are be removed.
   d. Reinstall Items that were removed and relocated as per the contract documents.
   e. Provide all cutting and patching required for installing all electrical fixtures, devices, wire and conduit.
   f. Provide all fees required for inspections and permits.
   g. Provide and install all interior lighting and exterior lighting. All cutting and patching for lighting will be by this contractor.
   h. Provide support framing for Electrical equipment and conduits.
   i. Provide firestopping and sealing all electrical penetrations
   j. Provide owner training

6. General Requirements, including but not limited to, additional items specifically indicated as the Work of this Contract.
7. Provide multiple shift work as needed to complete work as shown on milestone schedule. It is the contractor's responsibility to include such shift work in their contract. The owner will not be responsible for paying any cost associated with shift work. Contractors will be required to provide a detailed schedule which will be approved by the CM for all shift work required prior to work commencing.

B. The Work of the Electrical Work Contract includes but is not limited to the Work that is specified in the Project Manual(s) and as shown on the drawings that form the contract plans. The Contractor is directed to examine all plan drawings since certain details and/or notes may appear anywhere therein that apply to his/her particular work. This prime contract is defined as, and includes, all Sections in the Divisions indicated by reference, and specific Sections noted:
   1.
   2. Division 1 –General Requirements all Sections, including Temporary Facilities indicated
   3. Section 07 84 13, Penetration Firestopping, as required for the Work of this Contract
   4. Section 07 84 43, Joint Firestopping, as required for the Work of this Contract
   5. Section 07 92 00, Joint Sealers, as required for the Work of this Contract
   6. Division 23 – Mechanical as applicable for Equipment Connections
   7. Division 26 - Electrical - All Sections
   8. Division 27- Communications- All Sections
   9. Division 28 – Electronic Safety and Security- All Sections

1.12 ELECTRICAL WORK CONTRACT - EC-2

A. Work of this Contract includes, but is not limited to, the following descriptions:

1. Includes interior and exterior Electrical Lighting, Electrical Panel and Equipment connections and other systems traditionally recognized as Electrical work. This includes but is not limited to, all work shown on the Drawings, unless noted otherwise. It also includes administrative and coordination responsibilities.
   a. Drawings
      1) Electrical (BE Drawings)

2. Coordination:

   a. Coordination with the work of all of the prime contractors.
      1) Drawings
         a) All

3. Demolition:
   a. Removal of items as shown and/or required.
   b. Removal and disconnections of electrical devices in walls, ceilings, floors and site scheduled to be removed in portion of building and site where other work is being performed.
   c. Coordinate with the Construction Manager for necessary shutdowns and removals. Minimum of 48-hour notice will be required for any shutdown so that it doesn't affect other trades or the school district's operations. Shutdown may be required to be performed during second shift or weekend.
   d. Disconnect power to mechanical and plumbing equipment as required per the contract documents. Coordinate all work with HVAC Contractor.
   e. All cutting and patching necessary for work of this contract, including layout, sleeves, coring, debris removal, saw cuts, lintels (furnish and install), drywall work, plaster work, grouting, painting, ceiling removal and replacement, etc.

4. Temporary Facilities
   a. Provide Temporary Facilities indicated as Work of this Contract in Division 1 Section 01 50 00, "Temporary Facilities and Controls"
   b. Provide and maintain temporary electric power and lighting.
   c. Provide and maintain electric and internet service to Construction Manager's field office.
   d. Provide and maintain fire alarm and security system during replacement of the entrance doors and frames.

5. New Construction:

   a. Provide ALL wiring to ALL HVAC equipment as indicated on the drawings
   b. Provide new lighting fixtures indicated on the contract documents.
   c. All existing and new wire shall be properly supported above the ceiling per the contract documents. This includes all wire that is currently sitting on the ceiling tile and grid in areas where ceilings are be removed.
   d. Reinstall Items that were removed and relocated as per the contract documents.
   e. Provide all cutting and patching required for installing all electrical fixtures, devices, wire and conduit.
   f. Provide all fees required for inspections and permits.
   g. Provide and install all interior lighting and exterior lighting. All cutting and patching for lighting will be by this contractor.
   h. Provide support framing for Electrical equipment and conduits.
   i. Provide firestopping and sealing all electrical penetrations
   j. Provide owner training

6. General Requirements, including but not limited to, additional items specifically indicated as the Work of this Contract.

7. Provide multiple shift work as needed to complete work as shown on milestone schedule. It is the contractor's responsibility to include such shift work in their contract. The owner will not be responsible for paying any cost associated with shift work. Contractors will be required to provide a detailed schedule which will be approved by the CM for all shift work required prior to work commencing.

B. The Work of the Electrical Work Contract includes but is not limited to the Work that is specified in the Project Manual(s) and as shown on the drawings that form the contract plans. The Contractor is directed to examine all plan drawings since certain details and/or notes may appear anywhere therein that apply to his/her particular work. This prime contract is defined as, and includes, all Sections in the Divisions indicated by reference, and specific Sections noted:
1.
2. Division 1 –General Requirements all Sections, including Temporary Facilities indicated
3. Section 07 84 13, Penetration Firestopping, as required for the Work of this Contract
4. Section 07 84 43, Joint Firestopping, as required for the Work of this Contract
5. Section 07 92 00, Joint Sealers, as required for the Work of this Contract
6. Division 23 – Mechanical as applicable for Equipment Connections
7. Division 26 - Electrical - All Sections
8. Division 27- Communications- All Sections
9. Division 28 – Electronic Safety and Security- All Sections
10.

1.13 CONTRACT PC-1 – PLUMBING WORK CONTRACTOR

A. Work of this Contract includes, but is not limited to, the following descriptions:

1. Includes All work traditionally recognized as Plumbing work. This includes but is not limited to, all work shown on the Drawings, unless noted otherwise. It also includes administrative and coordination responsibilities.

    a. Drawings

        1) Plumbing

2. Coordination:

    a. Coordination with the work of all of the prime contractors.
        1) Drawings
            a) All

3. Demolition:
    a. Removal of items as shown and/or required.
    b. Removal and disconnections of existing locker room and bathroom fixtures and piping
    c. Coordinate with the Construction Manager for necessary shutdowns and removals. Minimum of 48-hour notice will be required for any shutdown so that it doesn't affect other trades or the school district's operations. Shutdown may be required to be performed during second shift or weekend.
    d. All cutting and patching necessary for work of this contract, including layout, sleeves, coring, debris removal, saw cuts, lintels (furnish and install), drywall work, plaster work, grouting, painting, ceiling removal and replacement, etc.

4. Temporary Facilities
    a. Provide Temporary Facilities indicated as Work of this Contract in Division 1 Section 01 50 00, "Temporary Facilities and Controls"
    b. Provide and maintain temporary electric power and lighting.
    c. Provide and maintain electric and internet service to Construction Manager's field office.
    d. Provide and maintain fire alarm and security system during replacement of the entrance doors and frames.

5. New Construction:

    a. Provide all new piping above and below slab. Layout, sawcutting, removal of concrete and excavation/backfilling and infilling with concrete is part of this contract. See detail 4/AP404 & 2/BP500
    b. Provide all new fixtures
    c. Provide all new insulation and label as shown in the contract documents
    d. Provide firestopping and sealing all plumbing penetrations
    e. Provide all testing of new and existing (that has been modified or impacted during construction) piping.
    f. Provide owner training

6. General Requirements, including but not limited to, additional items specifically indicated as the Work of this Contract.
7. Provide multiple shift work as needed to complete work as shown on milestone schedule. It is the contractor's responsibility to include such shift work in their contract. The owner will not be responsible for paying any cost associated with shift work. Contractors will be required to provide a detailed schedule which will be approved by the CM for all shift work required prior to work commencing.

B. The Work of the Plumbing Work Contract includes but is not limited to the Work that is specified in the Project Manual(s) and as shown on the drawings that form the contract plans. The Contractor is directed to examine all plan drawings since certain details and/or notes may appear anywhere therein that apply to his/her particular work. This prime contract is defined as, and includes, all Sections in the Divisions indicated by reference, and specific Sections noted:
    1. Division 01 –General Requirements all Sections, including Temporary Facilities indicated
    2. Section 02 41 19, Selective Demolition
    3. Division 03 - 03 30 53- Miscellaneous Cast-in-Place
    4. Division 07 - 07 84 13, Penetration Firestopping, as required for the Work of this Contract
    5. Section 07 84 43, Joint Firestopping, as required for the Work of this Contract
    6. Division 07 - 07 92 00, Joint Sealers, as required for the Work of this Contract
    7. Division 22- Plumbing

1.14 DEFINITION OF EXTENT OF PRIME CONTRACT WORK; ADDITIONAL PRIME CONTRACT WORK NOT PREVIOUSLY DESCRIBED

1. All Prime Contractors are responsible for reviewing plans and specs as it pertains to their scope of work mentioned in the contract documents. Scopes of work referenced may be found in multiple locations throughout the plans and specifications.
2. Local custom and trade union jurisdictional settlements do not control the scope of work included in each prime contract. When a potential jurisdictional dispute or similar interruption of work is first identified or threatened, the affected prime contracts shall promptly negotiate a reasonable settlement to avoid or minimize the pending interruption and delays.
3. All OSHA safety and hazardous materials regulations will be enforced on this project. All Contractors must submit a safety program, a hazardous materials program, (all required data must be maintained at the job site) and attend safety meetings. Toolbox talks will be required from each prime contractor.
4. All Contractors are responsible for any debris caused by their work. Daily clean-up and disposal are required by each Contractor for the periods which that Contractor is performing work on site. Each trade will assign at least one person to the weekly clean-up; the name of this person is to be submitted to the Construction Manager.
5. All Contractors are responsible for cutting/patching required to complete their 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.
6. Multiple Crews: To maintain the project schedule, each Prime Contractor may be required to provide multiple crews. Each crew is to be furnished with its own supervision, cranes, scaffold and other means necessary to maintain the Project Schedule.
7. Supervision: The proposed project manager and field superintendent for the project is to have at least five years experience in the proposed position. Each successful bidder shall

submit resumes to the Construction Manager for the proposed project manager and field superintendent for the project. This information will be reviewed with the Owner, Architect and Construction Manager for approval. Should the Project Managers and/or Superintendent prove unqualified for the position at any point in the project, the Construction Manager shall issue a letter stating that the person is to be removed from involvement in the project. Action by the contractor must be made within seven working days of receipt of such letter.

8. When selective demolition or cutting and patching (all demolition necessary for work of their contract, including layout, sleeves, coring, debris removal, saw cuts, drywall work, plaster work, grouting, painting, ceiling removal, etc) is required solely by another prime contract to perform their work it shall be by the Prime Contractor requiring the work to achieve the result indicated. Under this condition, the prime contractor needing the demolition to perform the work will accomplish the demolition and the cutting and patching as indicated in Subparagraph 5 above.
9. Each prime contractor shall return areas disturbed by their work activities to condition prior to start of work.
10. Each prime contractor shall maintain a 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.
11. Each prime contractor is to survey existing work and submit to the Construction Manager a list of damaged areas (e.g., plaster walls, woodwork) prior to commencing work. Any damaged areas not identified prior to the work shall be the responsibility of the contractor/ Contractors working in that area. Construction Manager will have photos of existing conditions on file for reference.
12. Clean up: Each Prime Contractor is to stockpile their debris on a daily basis and place it in the dumpster. Dumpsters for non-asbestos containing materials shall be provided by each Prime Contractor for their own work.
13. The General Construction Work Contract (Contract # GC-1) is required to submit a construction and submittal schedule based on the milestone dates to the Construction Manager for review and comment no later than 2 weeks after a Notice to Proceed for the work is issued. The other prime contractors have 10 days to provide their duration schedule to the Construction Manager. The Construction manager will then distribute to the General Construction Contractor to provide a final construction schedule.
14. Unless a specific item or material is noted as to remain the Owner's property or to become the Contractor's property, any material having salvage or reuse value shall be inspected by the Owner. If the Owner wishes to retain this material, it shall be turned over to him on the site where directed. If the Construction Manager designates the material as scrap, it shall become the contractor’s property and removed from the site. Material having salvage value shall be carefully removed.
15. When the building is occupied and fire alarm and safety system work is in progress, the Electrical Contractor shall continuously maintain the existing building's fire alarm and detection system and exit, and emergency lighting system or provisions must be made by the Electrical Contractor to provide equivalent safety. Electrical Contractor must notify the local fire department of any non-operating systems.
16. Electrical Contractor (Contract # EC-1) shall be responsible for all electrical conduit and associated work. The Electrical contractor shall coordinate with all local utilities for installation of their work. The Sitework contractor shall excavate and backfill trenches required for site lighting and associated conduit. Electrical Contractor shall provide and install all conduit.
17. All personnel required to be on site shall have all required personnel protective equipment on at all times.
18. All personnel on site shall at all times have a photo ID displayed where visible. Those without will be removed from site at once. If the same individual fails to have the ID a second time they will be removed from site and not be allowed back on site.

1.15 TESTING

A. Required testing and test procedures are indicated under each Division of the Technical Specifications. Other testing shall be performed per generally accepted standards.

B. The Architect shall reserve the right to require additional information as is deemed necessary to fully evaluate testing results.

C. The Owner shall employ and pay for an independent testing and inspection agency for testing requirements of their work as assigned by this scope of work. All testing shall be per technical specification requirements. The Prime Contractor requiring testing will notify the Construction Manager at least 48 hours in advance of the required testing to allow for coordination and scheduling. Failure to give sufficient notice will require the prime contractor to pay for alternate testing to satisfy the specification.

1.16 WORK SEQUENCE

A. The Work will be conducted to provide the least possible interference to the activities of the Owner's personnel.

B. All contract scopes of work in unoccupied areas of work can be performed weekdays from 7:00 AM to 3:30 PM unless otherwise noted. It is each contractor responsibility to work two shifts to complete the work by the substantial completion date. Work cannot be performed in occupied areas. Work shall be scheduled off-hours, vacations and weekends for occupied areas. A Construction Manager Superintendent must be on site at all times that work is being performed. If a contractor fails to maintain the progress as indicated by the milestone schedule by no other fault but its own and requires overtime to complete the work; the contractor shall make arrangements with the Construction Manager 24 hours in advance and pay for a Construction Manager's superintendent at $125.00 per hour. If the cause for delay is multi-contract, then the costs shall be distributed evenly among the prime contractors. Advise the Construction Manager 48 hours prior to commencing work inside the building.

C. Coordination of any utility and/or power interruption must be done with the Construction Manager. Shutdowns must occur during off-hours and on days when the building is not occupied by the owner.

D. Construction access to the site shall be limited to those designated for contractor's personnel, equipment and deliveries by the Owner. Contractors' staging, parking and storage shall be coordinated by the Construction Manager.

E. Each Contractor shall inspect the site and review the AHERA report on file for the presence of asbestos. Unless otherwise noted, there will be asbestos containing material in place that will require work to take place in the vicinity of, around and/or next to. Each prime contractor that will be working above ceilings, demolishing, in crawl spaces, boiler rooms and all other areas that may contain asbestos per the AHERA report, shall employ "Allied Trades: certified/licensed tradesman as part of the onsite workforce".

1.17 OCCUPANCY REQUIREMENTS

A. The General Work Contractor shall provide indoor air quality management as specified by the Department of Labor and OSHA for the building, when the building is enclosed, as determined by the Construction Manager.

1. Provide an exhaust air system for the project indoor areas that could produce fumes, VOC's off-gasses, gasses, dusts, mists, or other emissions.
2. Exhaust air system for the project areas that could produce emissions listed in Paragraph 1 shall be utilized.
3. Provide temporary partitions and air seals to prevent the migration of airborne contaminants from unoccupied areas to occupied areas when applicable.

B. Quality assurance:
1.
2. Maintain a negative pressure between the work area and the space surrounding the work area.
3. Before start of work, submit a design for the exhaust air system. Do not begin work until approval by the Owner is obtained.

a. The number of machines required.
b. Location of the machines in the workspace.

c. Description of the methods used to test air flow and pressure differential.

C. System operation:

1. A sufficient quantity of exhaust fans in existing window openings or other approved locations shall be operated in accordance with the following applicable standards.
2. Exhaust air system shall operate for a minimum of 72 hours after work is completed, or until all materials have cured sufficiently as to stop out gassing of fumes or odors and area has been ventilated to remove all detectable traces of odors and fumes.
3. Maintain fifty (50) feet clearance from all temporary exhaust outlets to all active building outdoor air intakes.

1.18 PROJECT MILESTONE SCHEDULE The Work shall be conducted in accordance with the following schedule:

1. General Work Contractor (GC-1):

a. Contract Award Date: March 20,2024.

b. Commencement of Off-Site Activities: Immediately following Contract Award.

c. Commencement of On-Site Activities:

1) Field work interior to buildings, prior to June 3, 2024, for submittals and other preparation activities: Immediately upon required insurances being in place. Field Work to be coordinated with owner's representative and may not interfere with academic or other related educational activities.

2) Wallkill Senior High School- this project will be completed over 2 summer (2024 & 2025)

a) Team Locker Room Start Date: June 3, 2024.
b) Boys and Girls Locker Room: June 14, 2024
c) Remaining work- see phasing drawing with dates
d) Bathrooms: June 1, 2024

d. Construction Activities:

1) Prior to June 3, 2024, no interior work can be completed within any of the district buildings.

2) During Testing: On-Site construction activities between the hours of 7:00 AM and 3:30 PM with motorized equipment, delivery of construction material or any construction practice that may be distracting to students will NOT to be allowed without Owner and CM's written approval on the following dates:

e. Construction Activities: Daily Work Limits

1) Monday – Friday: On-Site (Interior / Exterior) construction activities between the hours of 7:00 AM and 10:00 PM with motorized equipment, delivery of construction material or any construction practice. Written Permission from Owner required for additional work hours. Provide Owner with 72 Hour Notice before proposed work.

2) Saturday – Sunday: Written Permission from Owner required for Saturday and Sunday work. Provide Owner with 72 Hour Notice before proposed work.

3) Federal Holidays: Written Permission from Owner required for Saturday and Sunday work. Provide Owner with 72 Hour Notice before proposed work.

f. Submittals: Provide all submittals within 30 days after award of contract.

a. Substantial Completion Date:

1) Wallkill Senior High School: August 30, 2024

2) Wallkill Senior High School: August 29, 2025

b. Owner / End User Access – Facility Use: By September 3, 2024

c. Final completion date: 60 days after Substantial Completion

2. General Work Contractor (GC-2):

a. Contract Award Date: March 20, 2024.

b. Commencement of Off-Site Activities: Immediately following Contract Award.

c. Commencement of On-Site Activities:

1) Field work interior to buildings, prior to June 27, 2024, for submittals and other preparation activities: Immediately upon required insurances being in place. Field Work to be coordinated with owner's representative and may not interfere with academic or other related educational activities.

2) John G. Borden Middle School this project will be completed over 2 summer (2024 & 2025)

a) Boys/Girls Locker Rooms: June 14, 2024.
b) Ceilings Work- July 1, 2024
c) Masonry Repointing- July 1, 2024

d. Construction Activities:

1) Prior to June 14, 2024 no interior work can be completed within any of the district building.

2) During Testing: On-Site construction activities between the hours of 7:00 AM and 3:30 PM with motorized equipment, delivery of construction material or any construction practice that may be distracting to students will NOT to be allowed without Owner and CM's written approval on the following dates:

e. Construction Activities: Daily Work Limits

1) Monday – Friday: On-Site (Interior / Exterior) construction activities between the hours of 7:00 AM and 10:00 PM with motorized equipment, delivery of construction material or any construction practice. Written Permission from Owner required for additional work hours. Provide Owner with 72 Hour Notice before proposed work.

2) Saturday – Sunday: Written Permission from Owner required for Saturday and Sunday work. Provide Owner with 72 Hour Notice before proposed work.

3) Federal Holidays: Written Permission from Owner required for Saturday and Sunday work. Provide Owner with 72 Hour Notice before proposed work.

f. Submittals: Provide all submittals within 30 days after award of contract.

g. Substantial Completion Date:

1) John G. Borden Middle School: August 30, 2024

2) John G. Borden Middle School: August 29, 2025

h. Owner / End User Access – Facility Use: By September 3, 2024

i. Final completion date: 60 days after Substantial Completion

3. General Work Contractor (GC-3):

a. Contract Award Date: March 20, 2024.

b. Commencement of Off-Site Activities: Immediately following Contract Award.

c. Commencement of On-Site Activities:

1) Field work interior to buildings, prior to July 1, 2024, for submittals and other preparation activities: Immediately upon required insurances being in place. Field Work to be coordinated with owner's representative and may not interfere with academic or other related educational activities.

2) Plattekill Elementary School

a) Interior Improvements construction start date: July 1, 2024

d. Construction Activities:

1) Prior to July 1, 2024 no interior work can be completed within any of the district building.

2) During Testing: On-Site construction activities between the hours of 7:00 AM and 3:30 PM with motorized equipment, delivery of construction material or any construction practice that may be distracting to students will NOT to be allowed without Owner and A/E's written approval on the following dates:

e. Construction Activities: Daily Work Limits

1) Monday – Friday: On-Site (Interior / Exterior) construction activities between the hours of 7:00 AM and 10:00 PM with motorized equipment, delivery of construction material or any construction practice. Written Permission from Owner required for additional work hours. Provide Owner with 72 Hour Notice before proposed work.

2) Saturday – Sunday: Written Permission from Owner required for Saturday and Sunday work. Provide Owner with 72 Hour Notice before proposed work.

3) Federal Holidays: Written Permission from Owner required for Saturday and Sunday work. Provide Owner with 72 Hour Notice before proposed work.

f. Submittals: Provide all submittals within 30 days after award of contract.

g. Substantial Completion Date:

1) Plattekill Elementary School: August 30, 2024.

h. Owner / End User Access – Facility Use: By September 3, 2024

i. Final completion date: 60 days after Substantial Completion

4. Mechanical Work Contractor (HVAC-1):

a. Contract Award Date: March 20, 2024.

b. Commencement of Off-Site Activities: Immediately following Contract Award.

c. Commencement of On-Site Activities:

1) Field work interior to buildings, prior to June 14, 2024, for submittals and other preparation activities: Immediately upon required insurances being in place. Field Work to be coordinated with owner's representative and may not interfere with academic or other related educational activities.

2) Wallkill Senior High School this project will be completed over 2 summer (2024 & 2025)

a) Interior Improvements construction start date: June 14, 2024.

3) John G. Borden Middle School this project will be completed over 2 summer (2024 & 2025)

a) Interior Improvements construction start date: June 14, 2024.

d. Construction Activities:

1) Prior to June 14, 2024 and after September 3, 2024, no interior work can be completed within any of the district buildings between the hours of 7:00 AM and 3:30 PM without Owner and CM's written approval.

2) During Testing: On-Site construction activities between the hours of 7:00 AM and 3:30 PM with motorized equipment, delivery of construction material or any construction practice that may be distracting to students will NOT to be allowed without Owner and CM's written approval on the following dates:

e. Construction Activities: Daily Work Limits

1) Monday – Friday: On-Site (Interior / Exterior) construction activities between the hours of 7:00 AM and 10:00 PM with motorized equipment, delivery of construction material or any construction practice. Written Permission from Owner required for additional work hours. Provide Owner with 72 Hour Notice before proposed work.

2) Saturday – Sunday: Written Permission from Owner required for Saturday and Sunday work. Provide Owner with 72 Hour Notice before proposed work.

3) Federal Holidays: Written Permission from Owner required for Saturday and Sunday work. Provide Owner with 72 Hour Notice before proposed work.

f. Submittals: Provide all submittals within 30 days after award of contract.

g. Substantial Completion Date:

1) Wallkill Senior High School: August 30, 2024

2) John G. Borden Middle School: August 30, 2024

h. Owner / End User Access – Facility Use: By September 3, 2024

i. Final completion date: 60 days after Substantial Completion

5. Electrical Work Contractor (EC-1):

a. Contract Award Date: March 20, 2024.

b. Commencement of Off-Site Activities: Immediately following Contract Award.

c. Commencement of On-Site Activities:

1) Field work interior to buildings, prior to June 14, 2024, for submittals and other preparation activities: Immediately upon required insurances being in place. Field Work to be coordinated with owner's representative and may not interfere with academic or other related educational activities.

2) Wallkill Senior High School

a) Interior Improvements construction start date: June 14, 2024.

d. Construction Activities:

1) Prior to June 14, 2024 and after September 1, 2024, no interior work can be completed within any of the district buildings between the hours of 7:00 AM and 3:30 PM without Owner and CM's written approval.

2) During Testing: On-Site construction activities between the hours of 7:00 AM and 3:30 PM with motorized equipment, delivery of construction material or any construction practice that may be distracting to students will NOT to be allowed without Owner and CM's written approval on the following dates:

e. Construction Activities: Daily Work Limits

1) Monday – Friday: On-Site (Interior / Exterior) construction activities between the hours of 7:00 AM and 10:00 PM with motorized equipment, delivery of construction material or any construction practice. Written Permission from Owner required for additional work hours. Provide Owner with 72 Hour Notice before proposed work.

2) Saturday – Sunday: Written Permission from Owner required for Saturday and Sunday work. Provide Owner with 72 Hour Notice before proposed work.

3) Federal Holidays: Written Permission from Owner required for Saturday and Sunday work. Provide Owner with 72 Hour Notice before proposed work.

f. Submittals: Provide all submittals within 30 days after award of contract.

g. Substantial Completion Date:

1) Wallkill Senior High School: August 30, 2024

h. Owner / End User Access – Facility Use: By September 3, 2024

i. Final completion date: 60 days after Substantial Completion

6. Electrical Work Contractor (EC-2):

a. Contract Award Date: March 20, 2024

b. Commencement of Off-Site Activities: Immediately following Contract Award.

c. Commencement of On-Site Activities:

1) Field work interior to buildings, prior to June 14, 2024, for submittals and other preparation activities: Immediately upon required insurances being in place. Field Work to be coordinated with owner's representative and may not interfere with academic or other related educational activities.

2) John G. Borden Middle School

a) Interior Improvements construction start date: June 14, 2024.

d. Construction Activities:

1) Prior to June 14, 2024 and after September 3, 2024, no interior work can be completed within any of the district buildings between the hours of 7:00 AM and 3:30 PM without Owner and CM's written approval.

2) During Testing: On-Site construction activities between the hours of 7:00 AM and 3:30 PM with motorized equipment, delivery of construction material or any construction practice that may be distracting to students will NOT to be allowed without Owner and CM's written approval on the following dates:

e. Construction Activities: Daily Work Limits

1) Monday – Friday: On-Site (Interior / Exterior) construction activities between the hours of 7:00 AM and 10:00 PM with motorized equipment, delivery of construction material or any construction practice. Written Permission from Owner required for additional work hours. Provide Owner with 72 Hour Notice before proposed work.

2) Saturday – Sunday: Written Permission from Owner required for Saturday and Sunday work. Provide Owner with 72 Hour Notice before proposed work.

3) Federal Holidays: Written Permission from Owner required for Saturday and Sunday work. Provide Owner with 72 Hour Notice before proposed work.

f. Submittals: Provide all submittals within 30 days after award of contract.

g. Substantial Completion Date:

1) John G. Borden Middle School: August 30, 2024

h. Owner / End User Access – Facility Use: By September 3, 2024

i. Final completion date: 60 days after Substantial Completion

7. Plumbing Work Contractor (PC-1):

a. Contract Award Date: March 20,2024.

b. Commencement of Off-Site Activities: Immediately following Contract Award.

c. Commencement of On-Site Activities:

1) Field work interior to buildings, prior to June 14, 2024, for submittals and other preparation activities: Immediately upon required insurances being in place. Field Work to be coordinated with owner's representative and may not interfere with academic or other related educational activities.

2) Wallkill Senior High School this project will be completed over 2 summer (2024 & 2025)

a) Interior Improvements construction start date: June 14, 2024.

3) John G. Borden Middle School this project will be completed over 2 summer (2024 & 2025)

a) Interior Improvements construction start date: June 14, 2024.

d. Plumbing Construction Activities:

1) Prior to June 14, 2024 and after September 3, 2024, no interior work can be completed within any of the district buildings between the hours of 7:00 AM and 3:30 PM without Owner and CM's written approval.

2) During Testing: On-Site construction activities between the hours of 7:00 AM and 3:30 PM with motorized equipment, delivery of construction material or any construction practice that may be distracting to students will NOT to be allowed without Owner and CM's written approval on the following dates:

e. Construction Activities: Daily Work Limits

1) Monday – Friday: On-Site (Interior / Exterior) construction activities between the hours of 7:00 AM and 10:00 PM with motorized equipment, delivery of construction material or any construction practice. Written Permission from Owner required for additional work hours. Provide Owner with 72 Hour Notice before proposed work.

2) Saturday – Sunday: Written Permission from Owner required for Saturday and Sunday work. Provide Owner with 72 Hour Notice before proposed work.

3) Federal Holidays: Written Permission from Owner required for Saturday and Sunday work. Provide Owner with 72 Hour Notice before proposed work.

f. Submittals: Provide all submittals within 30 days after award of contract.

g. Substantial Completion Date:

1) Wallkill Senior High School: August 30, 2024

2) John G. Borden Middle School: August 30, 2024

h. Owner / End User Access – Facility Use: By September 3, 2024

i. Final completion date: 60 days after Substantial Completion

8. Senior High School Gymnasium Floor Contractor:

a. Contract Award Date: March 20, 2024.

b. Commencement of Off-Site Activities: Immediately following Contract Award.

c. Commencement of On-Site Activities:

1) Field work interior to buildings, prior to July1, 2024, for submittals and other preparation activities: Immediately upon required insurances being in place. Field Work to be coordinated with owner's representative and may not interfere with academic or other related educational activities.

2) Wallkill Senior High School

a) Interior Improvements construction start date: July 1, 2024.

d. Submittals: Provide all submittals within 30 days after award of contract.

e. Substantial Completion Date:

1) Wallkill Senior High School: August 30, 2024

f. Owner / End User Access – Facility Use: By September 3, 2024

g. Final completion date: 60 days after Substantial Completion

9. Roofing Contractor (RC-4 & RC-5):

a. Contract Award Date: March 20,2024.

b. Commencement of Off-Site Activities: Immediately following Contract Award.

c. Commencement of On-Site Activities:

1) Field work interior to buildings, prior to July 1, 2024, for submittals and other preparation activities: Immediately upon required insurances being in place. Field Work to be coordinated with owner's representative and may not interfere with academic or other related educational activities.

2) Wallkill Senior High School

a) Exterior Improvements construction start date: July 1, 2024.

3) Borden Middle School

a) Exterior Improvements construction start date: July 1, 2024.

4) Wallkill Senior High School: August 30, 2024

5) Borden Middle School: August 30, 2024

d. Owner / End User Access – Facility Use: By September 3, 2024

e. Final completion date: 60 days after Substantial Completion

1.19 ALLOWANCES

A. See Specification Section 01 21 00.

1.20 ALTERNATES

A. The Contractor shall state where requested on the Bid Form the amount to be added to or deducted from the base bid for the alternates described in Section 01 23 00 - Alternates.

END OF SECTION 01 10 00

SECTION 01 21 00 - ALLOWANCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements governing allowances.

B. Types of allowances include the following:

1. Contingency allowances.

1.3 ACTION SUBMITTALS

A. Submit proposals for purchase of products or systems included in allowances.

1.4 INFORMATIONAL SUBMITTALS

A. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.
B. Submit time sheets and other documentation to show labor time and cost for installation of allowance items that include installation as part of the allowance.
C. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

1.5 COORDINATION

A. Coordinate allowance items with other portions of the Work.

1.6 CONTINGENCY ALLOWANCES

A. Use the contingency allowance only as directed by Architect for Owner's purposes.

B. Allowance shall include cost to Contractor of specific products and materials under allowance and shall include taxes, freight, and delivery to Project site. Contractor's costs for receiving and handling at Project site, labor, installation, and similar costs related to products and materials under allowance shall be included as part of the allowance.

C. Overhead and profit related to the allowance shall be included as part of the Contract Sum and not part of the allowance.

1.7 ALLOWANCE PROCEDURES

A. Authorization for use of allowances is documented through Allowance Access Authorization form provided in the Project Manual, accompanied by substantiating data.
B. At Project closeout, unused amounts remaining in the allowances will be credited to Owner by Change Order.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PREPARATION

A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

3.2 SCHEDULE OF ALLOWANCES - GENERAL WORK CONTRACT AT SENIOR HIGH SCHOOL (GC-1)

A. Allowance No. 1: Contingency Allowance: Include the sum of **$150,000** for use according to Owner's instructions and for hidden and unforeseen conditions discovered during construction.

3.3 SCHEDULE OF ALLOWANCES - GENERAL WORK CONTRACT AT BORDEN MIDDLE SCHOOL (GC-2)

A. Allowance No. 2: Contingency Allowance: Include the sum of **$100,000** for use according to Owner's instructions and for hidden and unforeseen conditions discovered during construction.

B. Allowance No. 3: Environmental Contingency Allowance: Include the sum of **$50,000** for use according to Owner's instructions and for hidden and unforeseen conditions discovered during construction.

3.4 SCHEDULE OF ALLOWANCES - GENERAL WORK CONTRACT AT PLATTEKILL ELEMENTARY SCHOOL (GC-3)

A. Allowance No. 4: Contingency Allowance: Include the sum of **$35,000** for use according to Owner's instructions and for hidden and unforeseen conditions discovered during construction.

3.5 SCHEDULE OF ALLOWANCES - PLUMBING WORK CONTRACT AT SENIOR HIGH SCHOOL AND BORDEN MIDDLE SCHOOL (PC-1)

A. Allowance No. 5: Contingency Allowance: Include the sum of **$50,000** for use according to Owner's instructions and for hidden and unforeseen conditions discovered during construction.

3.6 SCHEDULE OF ALLOWANCES - MECHANICAL WORK CONTRACT AT SENIOR HIGH SCHOOL AND BORDEN MIDDLE SCHOOL (HVAC-1)

A. Allowance No. 6: Contingency Allowance: Include the sum of **$100,000** for use according to Owner's instructions and for hidden and unforeseen conditions discovered during construction.

3.7 SCHEDULE OF ALLOWANCES - ELECTRICAL WORK CONTRACT AT SENIOR HIGH SCHOOL (EC-1)

A. Allowance No. 7: Contingency Allowance: Include the sum of **$85,000** for use according to Owner's instructions and for hidden and unforeseen conditions discovered during construction.

3.8 SCHEDULE OF ALLOWANCES - ELECTRICAL WORK CONTRACT AT BORDEN MIDDLE SCHOOL (EC-2)

A. Allowance No. 8: Contingency Allowance: Include the sum of **$45,000** for use according to Owner's instructions and for hidden and unforeseen conditions discovered during construction.

3.9 SCHEDULE OF ALLOWANCES –ALL CONTRACTS

Allowance	Contract	Type	Amount
1	GC-1	Contingency	$150,000
2	GC-2	Contingency	$50,000
3	GC-2	Environmental	$50,000
4	GC-3	Contingency	$35,000
5	PC-1	Contingency	$50,000
6	HVAC-1	Contingency	$100,000
7	EC-1	Contingency	$85,000
8	EC-2	Contingency	$45,000

Attachment: Allowance Access Authorization

END OF SECTION 01 21 00

ALLOWANCE ACCESS AUTHORIZATION:

Project: **Reconstruction to Wallkill Central School District**

Architect: **Tetra Tech Architects & Engineers** **Project No. 17597-22002**

Contractor:

AAA No.: **Initiation Date:**

The Allowance is allocated as follows:

Total original Contract Allowance was:	$
Amount of Contract Allowance Access previously authorized:	$
Adjusted Contract Allowance prior to this authorization is:	$
The amount of available Allowance will Decrease by this Access Authorization:	$
The remaining Contract Allowance, after this Access Authorization will be:	$

Recommended by:
Architect

By (Signature): _____

Date: _____

Recommended by:
Construction Manager

By (Signature): _____

Date: _____

Accepted by:
Contractor

By (Signature): _____

Date: _____

Approved by:
Owner

By (Signature): _____

Date: _____

SECTION 01 23 00 - ALTERNATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for alternates.

1.3 DEFINITIONS

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

1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.

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

1.4 PROCEDURES

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

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

B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration.

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

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

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

A. Alternate No. HS-1: SENIOR HIGH SCHOOL – REPLACEMENT OF CORRIDOR DROP CEILINGS AND LIGHTS

1. This Alternate affects one Contract, as follows:

a. Electrical Work Contract at Senior High School (EC-1): By Alternate at the Wallkill Senior High School, within the designated corridor, remove and preserve existing ceiling devices and preserve circuitry. Demolish existing luminaires, lighting controls and exit signs as identified on Work by Alternate drawing AE137. Provide and install new luminaires and controls and all associated electrical work as identified on Work by Alternate drawing AE137.

b. Electrical Work at Borden Middle School (EC-2): Not applicable.

c. General Work Contract at Senior High School (GC-1): By Alternate at the Wallkill Senior High School, within the designated corridor, remove ceiling as identified by Key Note 9A on Drawings AA101 and AA103. Provide and install new ceiling system as identified on Drawings AA162 and AA163.

d. General Work Contract at Borden Middle School (GC-2): Not applicable.

e. General Work Contract at Plattekill Elementary School (GC-3): Not applicable.

f. Mechanical Work Contract (HVAC-1): By Alternate at the Wallkill Senior High School, within the designated corridor, remove CUH Face plate, sandblast, repaint and reinstall as identified by Key Note 3 on Basement and First Floor Key Plans, AM050

g. Plumbing Contract at Senior High School and Borden Middle School (PC-1): Not applicable

B. Alternate No. HS-2: SENIOR HIGH SCHOOL – REPLACEMENT OF CORRIDOR DROP CEILINGS AND LIGHTS

1. This Alternate affects one Contract, as follows:

a. Electrical Work Contract at Senior High School (EC-1): By Alternate at the Wallkill Senior High School, within the designated corridor, remove and preserve existing ceiling devices and preserve circuitry. Demolish existing luminaires, lighting controls and exit signs as identified on Work by Alternate drawing AE137. Provide and install new luminaires and controls and all associated electrical work as identified on Work by Alternate drawing AE137.

b. Electrical Work at Borden Middle School (EC-2): Not applicable.

c. General Work Contract at Senior High School (GC-1): By Alternate at the Wallkill Senior High School, within the designated corridor, remove ceiling as identified by Key Note 9A on Drawings AA103. Provide and install new ceiling system as identified on Drawings AA163.

d. General Work Contract at Borden Middle School (GC-2): Not applicable.

e. General Work Contract at Plattekill Elementary School (GC-3): Not applicable.

f. Mechanical Work Contract (HVAC-1): By Alternate at the Wallkill Senior High School, within the designated corridor, remove CUH Face plate, sandblast, repaint and reinstall as identified by Key Note 3 on Basement and First Floor Key Plans, AM050

g. Plumbing Contract at Senior High School and Borden Middle School (PC-1): Not applicable

C. Alternate No. HS-3: SENIOR HIGH SCHOOL – REPLACEMENT OF CORRIDOR DROP CEILINGS AND LIGHTS

1. This Alternate affects one Contract, as follows:

a. Electrical Work Contract at Senior High School (EC-1): By Alternate at the Wallkill Senior High School, within the designated corridor, remove and preserve existing ceiling devices and preserve circuitry. Demolish existing luminaires, lighting controls and exit signs as identified on Work by Alternate drawing AE137. Provide and install new luminaires and controls and all associated electrical work as identified on Work by Alternate drawing AE137.

b. Electrical Work at Borden Middle School (EC-2): Not applicable.

c. General Work Contract at Senior High School (GC-1): By Alternate at the Wallkill Senior High School, within the designated corridor, remove ceiling as identified by Key Note 9A on Drawings AA101, AA102, and AA103. Provide and install new ceiling system as identified on Drawings AA161, AA162, and AA163.

d. General Work Contract at Borden Middle School (GC-2): Not applicable.

e. General Work Contract at Plattekill Elementary School (GC-3): Not applicable.

f. Mechanical Work Contract (HVAC-1): By Alternate at the Wallkill Senior High School, within the designated corridor, remove CUH Face plate, sandblast, repaint and reinstall as identified by Key Note 3 on Basement and First Floor Key Plans, AM050.

g. Plumbing Contract at Senior High School and Borden Middle School (PC-1): Not applicable

END OF SECTION 01 23 00

SECTION 01 25 00 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for substitutions.

1.3 DEFINITIONS

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

1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product.
2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required in order to meet other Project requirements but may offer advantage to Owner.

1.4 ACTION SUBMITTALS

A. Substitution Requests: Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Substitution Request Form: Use the “Request for Substitution” form attached to this Specification Section. Complete all sections of the form.

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

a. Information to support identification of the proposed substitution as “for Cause” or “for Convenience”.

b. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.

c. Coordination information, including a list of changes or revisions needed to other parts of the Work, that will be necessary to accommodate proposed substitution.

d. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.

e. Product Data, including drawings and descriptions of products and fabrication and installation procedures.

f. Samples, where applicable or requested.

g. Certificates and qualification data, where applicable or requested.

h. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.

i. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.

j. Evidence of compliance with building code in effect for Project.

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

l. Cost information, including a proposal of change, if any, in the Contract Sum.

m. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.

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

3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation. Such additional information or documentation may include detailed side-by-side comparison charts of the specified product and the proposed substitution, and other data. Only one substitution request for each product will be considered. Architect will make final determination as to whether the substitution is “for Cause” or “for Convenience”.

   a. Architect will notify Contractor through Construction Manager of acceptance or rejection of proposed substitution.
   b. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.

1.5 QUALITY ASSURANCE

A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials.

1.6 PROCEDURES

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

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change.

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

a. Requested substitution is consistent with the Contract Documents and will produce indicated results.

b. Substitution request is fully documented and properly submitted.

c. Requested substitution will not adversely affect Contractor's construction schedule.

d. Requested substitution is compatible with other portions of the Work.

e. Requested substitution has been coordinated with other portions of the Work.

f. Requested substitution provides specified warranty.

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

B. Substitutions for Convenience: Architect will consider requests for substitution if received within 15 days after the Notice of Award. Requests received after that time may be considered or rejected at discretion of Architect.

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

a. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.

b. Requested substitution does not require extensive revisions to the Contract Documents.

c. Requested substitution is consistent with the Contract Documents and will produce indicated results.

d. Substitution request is fully documented and properly submitted.

e. Requested substitution will not adversely affect Contractor's construction schedule.

f. Requested substitution is compatible with other portions of the Work.

g. Requested substitution has been coordinated with other portions of the Work.

h. Requested substitution provides specified warranty.

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

PART 3 - EXECUTION (Not Used)

Attachment: Request for Substitution Form

END OF SECTION 01 25 00

TETRA TECH
ARCHITECTS & ENGINEERS

Request for Substitution

This form must be completely filled in with all relevant data by the Prime Contractor and submitted to the Architect in accordance with Project Manual Requirements for consideration before any request to change the drawing or specification requirements will be considered.

REFERENCE DATA

Project name:_____ Date of Request:_____

Location:_____ Architect's Project No:_____

Request by Contractor:_____

Address:_____

Contact person:_____ Phone:_____ Email:_____

SUBSTITUTION REQUEST DATA

(Provide statement indicating why specified product, fabrication or installation cannot be provided.)

SUBSTITUTION REQUESTED IS FOR:

☐ Named product.

☐ Product type, material, finish or formulation.

☐ Fabrication or installation methods.

Reason for request:_____

Note whether substitution is for cause or convenience:_____

PRODUCT / MATERIAL / METHOD FOR WHICH SUBSTITUTION IS REQUESTED IS SHOWN ON THE FOLLOWING DOCUMENTS:

Specification: Section No:_____ Page(s):_____ Paragraph/Item No.:_____

Drawings: (List No's of all Drawings affected):_____

DETAILED COMPARISON

Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.

COST/BENEFIT ANALYSIS

Describe in detail any alteration to any other part of the Works required by use of the requested substitution, including work by other Prime Contractors:

If applicable total net cost of any such other project required alterations, including overhead and profit: $_____
(Indicate if cost is an "Add" or "Deduct" to contract sum.

Benefits to Owner other than financial:_____

Schedule impact (Note any impact on project schedule by proposed substitution):_____

ADDITIONAL INFORMATION REQUIRED

PRIME CONTRACTOR TO PROVIDE ADDITIONAL INFORMATION AS NECESSARY AND ATTACH THE FOLLOWING INFORMATION:

1. Manufacturer's technical data sheets on proposed products, including test results as applicable.
2. Manufacturer's standard form of warranty.
3. Letter on manufacturer's letterhead stating that manufacturer will warrant products as specified, if specification requires specific warranties not included in manufacturer's standard form of warranty.
4. Letter(s) from other Prime Contractor(s) responsible for works affected by proposed substitution which state the total cost(s) of all such work, if any alteration of other work is required. Prime Contractor submitting this Request for Substitution will be responsible to fully reimburse the Owner for all such additional costs; processed via a deduct Change Order.

CONTRACTOR'S CERTIFICATION

1. BY SUBMISSION OF THIS SUBSTITUTION REQUEST AND PER SIGNATURE BELOW, CONTRACTOR CERTIFIES THIS SUBSTITUTION REQUEST HAS BEEN REVIEWED AND APPROVED BY THE CONTRACTOR IN ACCORDANCE WITH THE PROJECT MANUAL REQUIREMENTS.
2. BY SUBMISSION OF THIS SUBSTITUTION REQUEST AND PER SIGNATURE BELOW CONTRACTOR CERTIFIES THE PROPOSED SUBSTITUTION COMPLIES WITH ALL APPLICABLE REQUIREMENTS OF THE CONTRACT DOCUMENTS AND REFERENCED CODES AND STANDARDS.
3. BY SUBMISSION OF THIS SUBSTITUTION REQUEST AND PER SIGNATURE BELOW CONTRACTOR HEREBY WAIVES ALL RIGHTS TO ADDITIONAL COMPENSATION OR TIME THAT MAY SUBSEQUENTLY BECOME NECESSARY BECAUSE OF FAILURE OF PROPOSED MATERIAL TO PRODUCE THE INDICATED AND REQUIRED RESULTS.

Name of Authorized Contractor Representative: _____

Signature of Authorized Contractor Representative: _____

Name of Contractor_____

Date_____

SECTION 01 26 00 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

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

1.3 MINOR CHANGES IN THE WORK

A. Architect will issue supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, via the electronic form procedures outlined in Division 01 Section “Project Management and Coordination” and during the preconstruction conference.

1.4 PROPOSAL REQUESTS

A. Owner-Initiated Proposal Requests: Architect will issue a description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time, via the electronic form procedures outlined in Division 01 Section “Project Management and Coordination” and during preconstruction conference. If necessary, the description will include supplemental or revised Drawings and Specifications.

1. Proposal Requests issued by Architect are not instructions either to stop work in progress or to execute the proposed change.

2. Unless otherwise noted, within 14 days after receipt of Proposal Request, submit a quotation listing adjustments to the Contract Sum and the Contract Time necessary to execute the change.

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

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

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

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

e. Quotation Form: Use forms acceptable to Architect.

B. Contractor-Initiated Proposals: If latent or changed conditions require modifications to the Contract, Contractor may submit a request for a change to the Architect through Construction Manager.

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

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

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

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

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

6. Comply with requirements in Division 01 Section "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.

7. Proposal Request Form: Use form acceptable to Architect.

1.5 ADMINISTRATIVE CHANGE ORDERS

A. Allowance Adjustment: See Division 01 Section "Allowances" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect actual costs of allowances.

B. Unit-Price Adjustment: See Division 01 Section "Unit Prices" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect measured scope of unit-price work.

1.6 CHANGE ORDER PROCEDURES

A. On Owner's approval of a Proposal Request response, Architect will issue a Change Order for signatures of Owner, Architect, Construction Manager and Contractor.

1.7 CONSTRUCTION CHANGE DIRECTIVE

A. Construction Change Directive: Architect may issue a Construction Change Directive. Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.

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

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

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

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 26 00

SECTION 01 29 00 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

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

1.3 DEFINITIONS

A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

B. AIA Document: Current, authorized editions of standard forms issued by the American Institute of Architects (AIA).

1. Where AIA Documents are identified in this Section, the use of facsimiles of AIA documents or non-AIA documents is prohibited.

1.4 SCHEDULE OF VALUES

A. Submit the schedule of values to Architect through Construction Manager at earliest possible date, but no later than fourteen days before the date scheduled for submittal of initial Applications for Payment.

B. Format and Content:

1. Use AIA Document G703 as form for schedule of values, with entries typewritten. Unless noted otherwise, provide the following:

a. Subschedules for Separate Elements of Work: Provide subschedules for each building.

1) List allowances on subschedules only where exclusively part of separate element of work.

b. Summary Schedule: Provide summary schedule listing each subschedule and its total and each allowance; total of all subschedules and allowances shall equal the Contract Sum.

2. Identification: Include the following Project identification on the schedule of values:

    a. Project name and location.
    b. Architect's project number.
    c. Contractor's name and address.
    d. Date of submittal.

3. Use the Project Manual table of contents as a guide to establish line items for the schedule of values. Provide line item(s) for each Specification Section.

4. Arrange the schedule of values to indicate the following for each item listed, completing columns A, B and C of AIA Document G703:

    a. Column A: Indicate Specification Section number.
    b. Column B: Indicate Specification Section title, and provide separate line items for labor and materials.
    c. Column C: Provide separate line item dollar values for labor and materials. Round amounts to nearest whole dollar.

5. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment. In addition to line items for each applicable specification section, include the following:

    a. Multiple line items for amounts in excess of five percent of Contract Sum, broken out to subcomponents equaling not greater than five percent each.

    b. Project Startup:

        1) Include separate line items for project startup requirements, including the following separate line items:

            a) Insurance, based on actual invoice amount.
            b) Performance and payment bonds, based on actual invoice amount.
            c) Mobilization.
            d) Temporary facilities and controls.

    c. Allowances: Provide a separate line item in the schedule of values for each allowance.

    d. Submittals: Include a minimum of Two percent of Contract Sum.

    e. Supervision: Include a minimum of Two percent of Contract Sum.

    f. Safety and Field Reports: Include a minimum of Two percent of Contract Sum.

    g. Coordination Drawings: Provide a separate line item in the schedule of values for Coordination Drawings. Include a minimum of the following percentages of Contract Sum.

        1) Mechanical Contract: Two percent of the Contract Sum.
        2) All Other Contracts: One percent of the Contract Sum.

h. Meetings: Provide a separate line item in the schedule of values for Contractor attendance at meetings. Include a minimum of Two percentage of Contract Sum.

i. Wood Blocking: Provide a separate line item in the schedule of values for wood blocking.

j. Testing and Balancing (TAB): Include a minimum of Two percent of the Contract Sum (Mechanical Contract: Two percent as separate line items for testing and balancing requirements, as follows:

1) Pre-TAB activities (20 percent of TAB).
2) TAB activities (40 percent of TAB).
3) Final TAB reports. (40 percent of TAB).

k. Punch List: Three percent of Contract Sum.

l. Project Closeout:

1) Include separate line items for project closeout requirements, as follows:

a) Demobilization.
b) Warranties.
c) Final cleaning.
d) Operation and maintenance manuals.
e) Project record documents.
f) Demonstration and training.

2) The total value of all project closeout line items shall equal to not less than the following:

a) Five percent of the Contract Sum.

6. Each item in the schedule of values shall be complete. Include total cost and proportionate share of general overhead and profit for each item.

1.5 APPLICATIONS FOR PAYMENT

A. Each Application for Payment following the initial Application for Payment shall be consistent with previous applications as certified by Architect and Construction Manager.

B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.

1. Submit draft copy of Application for Payment **seven** days prior to due date for review by Architect and Construction Manager.

C. Application for Payment Forms: Use AIA Document G732 and AIA Document G703 as form for Applications for Payment.

D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Construction Manager will return incomplete applications without action.

1. Entries shall match data on the schedule of values.
2. Include amounts for work completed following previous Application for Payment, whether or not payment has been received.
3. Include amounts of fully-executed Change Orders and Construction Change Directives issued before last day of construction period covered by application.

E. Stored Materials: Include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. Differentiate between items stored on-site and items stored off-site.

1. Enter in column F (Materials Presently Stored) of AIA Document G703 the value of materials presently stored for which payment is sought. Recalculate the total of the column at the end of each pay period. This value covers both materials newly stored for which payment is sought and materials previously stored which are not yet incorporated into the Project. Payment by the Owner for stored materials does not result in a deduction from this column. Only as materials are incorporated into the Project is their value deducted from this column and incorporated into column E (Work Completed--This Period.).

2. Provide certificate of insurance, evidence of transfer of title to Owner, and consent of surety to payment, for stored materials.

3. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials.

F. Transmittal: Submit three signed and notarized original copies of each Application for Payment to Construction Manager.

G. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:

1. List of subcontractors.
2. Schedule of values.
3. Contractor's construction schedule.
4. Certificates of insurance and insurance policies.
5. Performance and payment bonds.

H. Final Payment Application: Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited to, two originals and two copies each of the following:

1. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
2. AIA Document G706A, "Contractor's Affidavit of Release of Liens."
3. AIA Document G707, "Consent of Surety to Final Payment."

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

Attachment: Stored Material Invoicing Documentation

END OF SECTION 01 29 00

TETRA TECH
ARCHITECTS & ENGINEERS

Stored Materials Invoicing Documentation

Project: _____

Project No.: _____ **Contract Type:** _____

Contractor: _____ **Subcontractor:** _____

Reason for Request:

_____

_____

Application for Payment No.: _____ **Date:** _____

1. **Material Identification**

Description: Quantity:

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

Provide Specific Location of Materials Stored:

_____

_____

_____

_____

_____

2. **Material Value** $ _____

☐ Attach an Invoice or Quantified Statement of Value.

3. **Certificate of Insurance**

☐ Attach a Certificate of Insurance for the above specified materials. Certificate shall name _____ (Name of District) as a loss payee with respect to the specified materials.

4. **Transfer of Title**

The Contractor hereby agrees to transfer complete ownership of all listed materials to _____ (Name of District) at the time payment is made to Contractor for the above referenced Application for Payment. The Contractor remains responsible for all contractual requirements for the above listed materials including complete installation and providing all warranties.

Signed Date

_____ _____

SECTION 01 31 00 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

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

1. General coordination procedures.
2. Digital data files.
3. Coordination drawings.
4. Owner's Project Representative activities.
5. Electronic form procedures.
6. Requests for Information (RFIs).
7. Project meetings.

1.3 COORDINATION PROCEDURES

A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections, which depend on each other for proper installation, connection, and operation. Each contractor shall coordinate its construction operations with those of other contractors and entities to ensure efficient and orderly installation of each part of the Work.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components.
2. Coordinate installation of different components with other contractors to ensure maximum performance and accessibility for required maintenance, service, and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.

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

1. Preparation of Contractor's construction schedule.
2. Installation and removal of temporary facilities and controls.
3. Project meetings.
4. Project closeout activities.

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

1.4 DIGITAL DATA FILES

A. Architect's Digital Data Files: Upon request, and at Architect's sole discretion, electronic copies of the Contract Drawings may be provided by Architect for Contractor's use in preparing submittals.

1. Architect may furnish Contractor digital data drawing files of the Contract Drawings for use in preparing Shop Drawings.

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

b. Format: The Contract Drawings may be available in AutoCAD and .pdf formats.

1) Architect's charge for drawings in AutoCAD format: $50 per drawing.
2) Architect's charge for drawings in .pdf format: $50 per request.

c. Contractor shall fill out and submit a Request for Electronic Drawing Files form included in Project Manual for any drawing files.

d. Contractor shall also execute a Terms of Electronic File Transfer (TOFT) included in Project Manual for any drawing files furnished in AutoCAD format.

e. The following drawings may be furnished for the appropriate discipline:

1) Site base file drawings.
2) Floor plans.
3) Reflected ceiling plans.

1.5 COORDINATION DRAWINGS

A. Each Contractor:

1. Participate in the Coordination Drawing process as required to ensure work is coordinated with associated Contractors to fulfill the scope and schedule of the project. Contractors with work in areas where more than one Contractor has Contract Work must participate in coordination process for that area of work.

2. Architect will furnish Contractor with digital media copies of architectural, structural, mechanical, plumbing, and electrical base information, not including drawing sheets or details, at no charge, upon providing Architect with a fully-executed indemnification agreement.

3. At an initial coordination meeting scheduled by the Mechanical Contractor and Construction Manager in accordance with schedule defined in Division 01 Section Multiple Project Summary – Project Schedule, coordinate the schedule of the creation and revision of Coordination Drawings with the Architect, Construction Manager, Owner, and involved Contractors as required to meet the construction schedule.

4. Revise Coordination Drawings identifying work of applicable Contract that requires coordination with building systems or that presents potential interference with existing construction or construction provided by another Contractor. Examples of these components and work include (but are not limited to):

    a. Systems located above ceilings or integrated into ceiling system such as ducts, piping, lighting, cable trays, electrical conduits, joist cross bracing, structure, supports, fire protection systems, diffusers, grilles, access doors, etc.

    b. Components of systems installed on roofs requiring roof penetrations, structural support, lightning protection, etc.

    c. Components suspended or otherwise inside spaces such as gymnasium backstops, light fixtures, ducts, gymnasium dividers, web spaces of trusses with duct/pipe, etc.

    d. Clearances required for service access or by codes. Show service access locations including brief note such as “service access to filters”.

    e. Equipment located adjacent to building that may need coordination with landscaping such as dust collectors, transformers, gas metering stations, chillers and condensing units, pads, louvers, etc.

5. Resolution of Conflicts and Interferences:

    a. Schedule additional coordination meetings through Construction Manager with Architect, Owner, and other Contractors and attend additional coordination meetings as required to fully resolve conflicts and complete process.

    b. Review draft revisions of respective trades and Owner at subsequent coordination meetings with involved parties. Resolve conflicts and interferences at these meetings.

    c. Reposition proposed locations of components and equipment in applicable Contracts as required to resolve conflicts and address Owner’s serviceability concerns after review of Coordination Drawings. For exposed work, adjust and coordinate configuration of components to achieve aesthetics consistent with the scope of the Project without increase in Contract Sum.

d. Notify Construction Manager, Architect, Owner's Representative, and affected Contractors in case of unresolved interferences or conflicts prior to installation of construction. Schedule meetings and take other measures to resolve interferences or conflicts and revise applicable Coordination Drawings as required. Re-process revised Coordination Drawings in accordance with "Processing of Coordination Drawings" below to ensure all Contractors are aware of revisions in Coordination Drawings.

e. When all conflicts have been resolved on each complete Coordination Drawing, each applicable Contractor shall digitally sign and date the drawings, and deliver to the Mechanical Contractor for additional distribution. A copy of the signed originals will be stored in the Construction Manager's jobsite offices for reference for the duration of the construction.

f. Each Contractor will be provided with a copy of each coordination drawing and may transcribe additional information from the copies stored in the Construction Manager's jobsite offices.

6. Do not proceed with work in Contract in each area until agreement is reached with all Contractors and the Construction Manager, Architect and Owner on exact arrangements for each room or area, unless otherwise directed by the Construction Manager, Architect or Owner.

a. If Contractor proceeds prior to resolving conflicts and receiving above agreement or direction and conflicts ensue as a result, Contractor must modify installed construction as required to permit other Contractors to proceed with coordinated installation at no change in Contract Sum.

B. Mechanical Contract:

1. In accordance with the Coordination Drawing creation schedule agreed to as described above, prepare and distribute Coordination Drawings as specified in the Division 23 Sections "Common Work Results for HVAC" and "Ductwork", for all areas with any construction work, including indoor areas and rooms, roofs, and near building areas with mechanical equipment. Consider construction of other Contracts as shown in Contract Documents to avoid conflicts. Prepare and revise the Coordination Drawings in the order and within the schedule agreed upon.

2. Coordinate the scheduling of coordination meetings with the project schedule Construction Manager, Architect, involved Contractors, and Owner. Schedule the meetings at the agreed upon schedule.

3. Deliver two prints and one electronic file in format as required elsewhere and as agreed to at the initial coordination meeting, of each Coordination Drawing simultaneously to Construction Manager, Architect, Owner, and each Contractor listed below and obtain written dated receipts from other contractors. Include additional print copy and electronic copy to Electrical Contractor, to become "Complete Coordination Drawing" for subsequent distribution and complete final coordination documentation as described below. Submit copy of receipts to Architect and Construction Manager.

4. Duplicate and deliver final complete drawings as required by Division 23 Section "Ductwork."

C. Contractors other than Mechanical Contractor:

1. Obtain Coordination Drawings and prepare draft revisions to Coordination Drawings showing applicable work of respective Contract and indicating perceived conflicts, proposed resolution of conflicts with existing conditions and construction of other Contracts as shown in Coordination Drawings.

2. Revise the Coordination Drawings in the order and within the schedule agreed upon.

3. Obtain Complete Coordination Drawing prints and revise showing components and work of applicable Contract including resolution of conflicts with construction of other Contracts as agreed to and as shown on revised draft Coordination Drawings.

4. Processing of Coordination Drawings: Receive, revise, and deliver Complete Coordination Drawings initially prepared by Mechanical Contractor according to the following sequence as applicable to Project.

5. Each Contractor: Obtain written dated receipt from subsequent recipient of Complete Coordination Drawings and submit copy of receipts to Architect and Construction Manager:

a. Mechanical Contract.
b. Electrical Contract.
c. General Contract.
d. Plumbing Contract.
e. Roofing Contract.

1.6 OWNER'S PROJECT REPRESENTATIVE ACTIVITIES

A. Project Representative shall:

1. Serve as liaison between Architect, Contractor[**s**] and Owner.

2. Perform on-site observations of the progress and quality of the Work as may be reasonably necessary to assist the Architect determine, in general, if the Work is being performed in a manner indicating that the Work when completed will be in conformance with the Contract Documents. Notify the Architect if, in the Project Representative's opinion, Work does not conform to the Contract Documents or requires special inspection or testing.

3. Monitor the Contractor's construction schedules on an ongoing basis and alert the Architect to conditions that may lead to delays in completion of the Work.

4. Coordinate shared access to work areas.

5. Coordinate and issue written approvals for acceptable interruptions of utilities and potentially disruptive activities.

6. Receive and review suggestions proposed by the Contractor, and submit them, together with recommendations, to the Architect.

7. Attend all meetings and report to the Architect on the proceedings.

8. Notify Architect when tests required by the Contract Documents and inspections by authorities having jurisdiction will be performed. Observe tests required by the Contract Documents and inspections by authorities having jurisdiction. Record and report to the Architect on test procedures, inspections, and results. Verify testing is performed in accordance with specified requirements and at appropriate times.

9. Maintain records at the construction site in an orderly manner, including correspondence, Contract Documents, Change Orders, Construction Change Directives, reports of meetings, Shop Drawings, Product Data and similar submittals; supplementary drawings, color schedules and requests for payment; and names, addresses telephone numbers, and email addresses of the Contractors, Subcontractors and principal material suppliers.

10. Maintain a daily log of activities at the site, including weather conditions, nature and location of Work being performed, verbal instructions and interpretations given to the Contractor, and specific observations. Record any occurrence or Work that might result in a claim for a change in Contract Sum or Contract Time. Maintain a list of visitors, their titles, and time and purpose of their visit.

11. Notify the Architect if any portion of the Work requiring Shop Drawings, Product Data or Samples is commenced before such submittals have been approved by the Architect. Receive and log Samples required at the site, notify the Architect when they are ready for examination, record the Architect’s action and maintain custody of approved Samples.

12. Review the Contractor's record copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications at intervals appropriate to the stage of construction and notify the Architect of any apparent failure by the Contractor to maintain up-to-date records.

13. Review Applications for Payment and forward to the Architect with recommendations for disposition.

14. Assist the Architect in conducting inspections to determine the date or dates of Substantial Completion and the date of final completion.

15. Assist the Architect in receipt and transmittal to the Owner of documentation required of the Contractor at completion of the Work.

B. Project Representative shall not:

1. Authorize deviations from the Contract Documents.

2. Approve submittals or substitute materials or equipment.

3. Personally conduct or participate in tests or third party inspections.

4. Assume any of the responsibilities of the Contractor's superintendent or of Subcontractors.

5. Expedite the Work for the Contractor.

6. Have control over or charge of or be responsible for construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the Work.

7. Authorize or suggest that the Owner occupy the Project in whole or in part.

1.7 ELECTRONIC FORM PROCEDURES

A. Use Architect's electronic form procedures for the following functions:

1. Request for Information (RFI) forms and logs.
2. Architect’s Supplemental Instruction (ASI) forms and logs. Refer to Division 01 Section “Contract Modification Procedures”.
3. Proposal Request (PR) forms and logs. Refer to Division 01 Section “Contract Modification Procedures”.

B. Contractor and other parties granted access by the Architect to Project electronic form procedures shall follow instructions issued by the Architect during the preconstruction conference.

1.8 REQUESTS FOR INFORMATION (RFIs)

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

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

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

1. Project number.

2. RFI number.

3. Contract number and title.

4. Name of Contractor.

5. Name of Contractor’s contact person.

6. Email address of Contractor’s contact person.

7. RFI subject.

8. Question: Fully describe question or information requested. Include:

    a. Specification Section number and title and related paragraphs, as appropriate.
    b. Drawing number and detail references, as appropriate.
    c. Field dimensions and conditions, as appropriate.
    d. Contractor's suggested resolution. If Contractor's solution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.

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

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

C. Architect's Action: Architect will review each RFI, determine action required, and respond. Allow reasonable time for Architect's response for each RFI.

1. The following RFIs will be returned without action:

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

2. Architect's action may include a request for additional information.

3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Division 01 Section "Contract Modification Procedures."

    a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect and Construction Manager] in writing within seven days of receipt of the RFI response.

D. On receipt of Architect's action, immediately distribute the RFI response to affected parties. Review response and notify Architect and Construction Manager within seven days if Contractor disagrees with response.

E. Electronic RFI Log: Architect will maintain a tabular log of RFIs organized by RFI number.

1.9 PROJECT MEETINGS

A. Preconstruction Conference: Construction Manager will schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner, Construction Manager and Architect, but no later than 15 days after date of Notice of Award.

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

2. Agenda: Discuss items of significance that could affect progress, including the following:

    a. Designation of key personnel and their duties.
    b. Lines of communications.
    c. Bonds and insurance.
    d. Subcontract list.
    e. Schedule of values.
    f. Payment request estimate.
    g. Applications for Payment.
    h. Contractor's construction schedule.
    i. Submittals.
    j. Electronic form procedures (RFIs, ASIs, PRs).
    k. Procedures for processing Change Orders and Construction Change Directives.
    l. Quality control.
    m. Adjoining properties.
    n. Project schedule.
    o. Contractor review of Contract Documents, including Drawings and Specifications.
    p. Project meetings.
    q. Project closeout procedures.
    r. Electronic drawings.
    s. AIA and Word documents.

3. Report: Construction Manager will prepare and distribute meeting report.

B. Structural Preconstruction Conference: Construction Manager will schedule and conduct a structural preconstruction conference, at a time convenient to Owner, Construction Manager and Architect.

1. Attendees: Authorized representatives of Owner, Owner's testing agency, Construction Manager, Architect, and their consultants; Geotechnical Engineer of Record; Contractor and its superintendent; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.

2. Agenda: Discuss items of significance, including the following:

    a. Procedures for testing and inspecting.
    b. Submittals.
    c. Testing, placing, curing and finishing structural concrete.
    d. Hot/cold weather concrete construction.
    e. Fabrication and erection of structural steel.
    f. Attaching metal floor and roof deck, as applicable.
    g. Procedures for constructing composite slabs, as applicable.
    h. Procedures for unit masonry control joints, grouting, and workmanship.

i. Hot/cold weather masonry construction.
j. Cold formed metal framing.
k. Roles of each party regarding the above work items.

3. Report: Construction Manager will prepare and distribute meeting report.

C. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity that requires coordination with other construction.

1. Review each Specification Section for requirements for preinstallation conferences.

a. No later than 15 days after date of Notice of Award, submit to Architect complete listing of preinstallation conferences to be held.

2. 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, Construction Manager, Commissioning Authority and Project Representative of scheduled meeting dates.

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

a. Contract Documents.
b. Deliveries.
c. Submittals.
d. Review of mockups.
e. Time schedules.
f. Weather limitations.
g. Manufacturer's written instructions.
h. Warranty requirements.
i. Compatibility of materials.
j. Acceptability of substrates.
k. Temporary facilities and controls.
l. Space and access limitations.
m. Testing and inspecting requirements.
n. Installation procedures.
o. Coordination with other work.
p. Required performance results.
q. Protection of adjacent work.

4. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.

5. Reporting: Distribute report of the meeting to each party present and to other parties requiring information.

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

D. Progress Meetings: Construction Manager will conduct progress meetings at biweekly intervals, unless otherwise necessitated.

1. Attendees: In addition to representatives of Owner, Commissioning Authority, Construction Manager, and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.

2. Agenda: Review report of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.

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

1) Report of progress since previous meeting.

2) Architect/Engineer discussion items.

3) Status of ASIs, PRs, Change Orders.

4) Status of submittals.

5) Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule.

a) Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.

b) Review schedule for next period.

6) Date of Substantial Completion.

7) Status of RFIs.

8) Owner discussion items.

9) Discussion items for each Contract.

10) General and administrative items, including such items as:

a) Project documentation.
b) Prohibitions.
c) Identification cards.
d) Separation.
e) Egress.
f) Conservation.

3. Report: Construction Manager will prepare and distribute the meeting report to each party present and to parties requiring information.

E. Health and Safety Committee Meetings: Owner will conduct health and safety committee meetings as needed, in accordance with requirements of Regulations of the Commissioner of Education, Part 155 (8 NYCRR 155), Section 155.5(c)(2).

1. Attendees: In addition to representatives of the Owner and Construction Manager, each contractor shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.

2. Agenda: Discuss items of significance, including the following:

a. Health and safety matters related to the construction project.

3. Report: Owner will prepare and distribute meeting report to each party present and to parties requiring information.

F. Project Closeout Conference: Construction Manager will schedule and conduct a project closeout conference, at a time convenient to Owner, Construction Manager and Architect, but no later than 90 days prior to each scheduled date of Substantial Completion.

1. Attendees: Authorized representatives of Owner, Commissioning Authority, Construction Manager, Architect, and their consultants; Contractor and its superintendent; and other concerned parties shall attend the meeting. Participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.

2. Agenda: Discuss items of significance that could affect or delay Project closeout, including the following:

a. Preparation of record documents.
b. Procedures required prior to inspection for Substantial Completion and for final inspection for acceptance.
c. Submittal of written warranties.
d. Requirements for preparing operations and maintenance data.
e. Requirements for delivery of material samples, attic stock, and spare parts.
f. Requirements for demonstration and training.
g. Owner's occupancy requirements.
h. Responsibility for removing temporary facilities and controls.

3. Report: Construction Manager will prepare and distribute meeting report.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

Attachment: Request for Electronic Drawing Files
Terms of Electronic File Transfer (TOFT)

END OF SECTION 01 31 00

TETRA TECH
ARCHITECTS & ENGINEERS

Cornell Business + Technology Park
10 Brown Road
Ithaca, New York 14850
Tel. (607) 277-7100
Fax (607) 277-1410

Request for Electronic Drawing Files – Business Office

Prime Contractor Name:

Prime Contractor Address:

Contact to Receive Invoice:

Project Name:

Project Number:

Project Manager:

Drawing Type: Some drawings may be only available as a PDF file and may NOT be available as an AutoCAD file.

☐ PDF Files ($50 per request) ☐ AutoCAD type files ($50 per file)

For PDF files:

List each Drawing # Requested – If requesting entire set note "All".

For AutoCAD files:

Number of drawing files

List each Drawing # Requested

Contractor Signature _____

TETRA TECH
ARCHITECTS & ENGINEERS

Cornell Business + Technology Park
10 Brown Road
Ithaca, New York 14850
Tel. (607) 277-7100
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Request for Electronic Drawing Files – Business Office

Prime Contractor Name:

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Project Number:

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Drawing Type: Some drawings may be only available as a PDF file and may NOT be available as an AutoCAD file.

☐ PDF Files ☐ AutoCAD type files

For PDF files:

List each Drawing # Requested – If requesting entire set note "All".

For AutoCAD files:

Number of drawing files

List each Drawing # Requested

Contractor Signature _____

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ARCHITECTS & ENGINEERS

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10 Brown Road
Ithaca, New York 14850
Tel. (607) 277-7100
Fax (607) 277-1410

Terms of Electronic File Transfer (TOFT)

The purpose of this document is to establish the terms of use and liability related to the electronic transfer of files from Tetra Tech Engineers, Architects & Landscape Architects, P.C. d/b/a Tetra Tech Architects & Engineers (hereinafter "Tetra Tech") to the Recipient (designated below). This Agreement covers all electronic files transmitted to the Recipient, associated with the Project(s) listed below, that are not otherwise covered by a contractual agreement to provide such files.

Project(s) & Project #s: _____

_____

Recipient of Electronic Files:

Company Name: _____

Company Address: _____

_____

Terms of Electronic File Transfer:

1. The electronic files (Files) furnished by Tetra Tech to the person or entity receiving the Files (Recipient) are provided only for the convenience of the Recipient, and only for its sole use. RECIPIENT AGREES THAT, BY OPENING THE PACKAGE CONTAINING THE FILES, RECIPIENT SHALL BE BOUND BY AND SUBJECT TO THE TERMS OF THIS DISCLAIMER.

2. Recipient recognizes that the Files may not be adequate or appropriate for Recipient's needs. In the case of any defects in the Files or any discrepancies between the Files and the hardcopy of the Files bearing the seal of Tetra Tech's professional registrant (if applicable), the sealed hardcopy shall govern. Recipient accepts the Files on an "as-is" basis, with any and all faults. There are no express warranties made by Tetra Tech with respect to the Files, and any implied warranties are excluded.

3. WITHOUT LIMITING THE GENERALITY OF THE FOREGOING, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE EXCLUDED. Tetra Tech assumes no responsibility for the accuracy or completeness of the Files, and any use or reuse of such electronic data for any purpose shall be at the Recipient's sole risk.

4. Furthermore, in consideration of the use of the electronic data and the Files, Recipient agrees, to the fullest extent permitted by law, to defend (by legal counsel selected by Tetra Tech), indemnify, and hold Tetra Tech harmless from any and all claims, damages, losses, costs, and expenses, including attorney's fees and court costs (including the costs of any appeals) arising out of or resulting from Recipient's use, reuse, or use by others, regardless of whether such claims, damages, losses, costs, and expenses are caused in whole or in part by Tetra Tech. The duty to defend, indemnify, and hold Tetra Tech harmless shall apply regardless of whether such claims, damages, losses, costs, and expenses arise out of causes of action for tort, including negligence, contract, warranty, or strict liability.

5. The Recipient agrees to the following use restrictions of the electronic files:

a. The use of these files is limited only to the operation and maintenance of the above referenced project(s).

_____

6. By signing below, the Recipient accepts full responsibility for the use of all electronic files received from and/or produced by Tetra Tech for the Project(s) listed above and any documents, instructions, or otherwise produced there from by the Recipient along with all Terms of Electronic Transfer indicated herein. A copy of this Agreement, executed by Tetra Tech, will be provided before or with the first electronic file transmittal.

Signature	Type or Print Name	Title	Date
_____	_____	_____	_____

SECTION 01 32 00 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

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

1. Contractor's construction schedule.
2. Reports.

1.3 INFORMATIONAL SUBMITTALS

A. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period. Follow format outlined in attachment at end of this Section.
B. Site Condition Reports: Submit at time of discovery of differing conditions.
C. Special Reports: Submit at time of unusual event.

1.4 COORDINATION

A. Secure time commitments for performing critical elements of the Work from entities involved.
B. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

1.5 CONTRACTOR’S CONSTRUCTION SCHEDULE, GENERAL

A. Time Frame: Extend schedule from date established for commencement of the Work to date of final completion.
B. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.

1.6 CONTRACTOR’S CONSTRUCTION SCHEDULE (GANTT CHART)

A. Gantt-Chart Schedule: Submit a comprehensive, horizontal, Gantt-chart-type, Contractor's construction schedule per requirements of Division 01 Section “Multiple Contract Project Summary – Project Schedule”.

1. Format: Refer to accompanying “Format for Construction Schedule”.

B. Preparation: Indicate each significant construction activity separately, by Specification Section, coordinated with the schedule of values. Provide line item(s) for each Specification Section.

C. Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities.

D. Distribution: Distribute copies of approved schedule to Architect**,** Construction Manager, Owner, separate contractors, testing and inspecting agencies, and other parties with a need-to-know schedule responsibility.

1. When revisions are made, distribute updated schedules to the same parties.

1.7 REPORTS

A. Site Condition Reports: Immediately on discovery of a difference between site conditions and the Contract Documents, prepare and submit a detailed report. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

B. Special Reports: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, response by Contractor's personnel, evaluation of results or effects, and similar pertinent information.

PART 2 - PRODUCTS (Not Used)

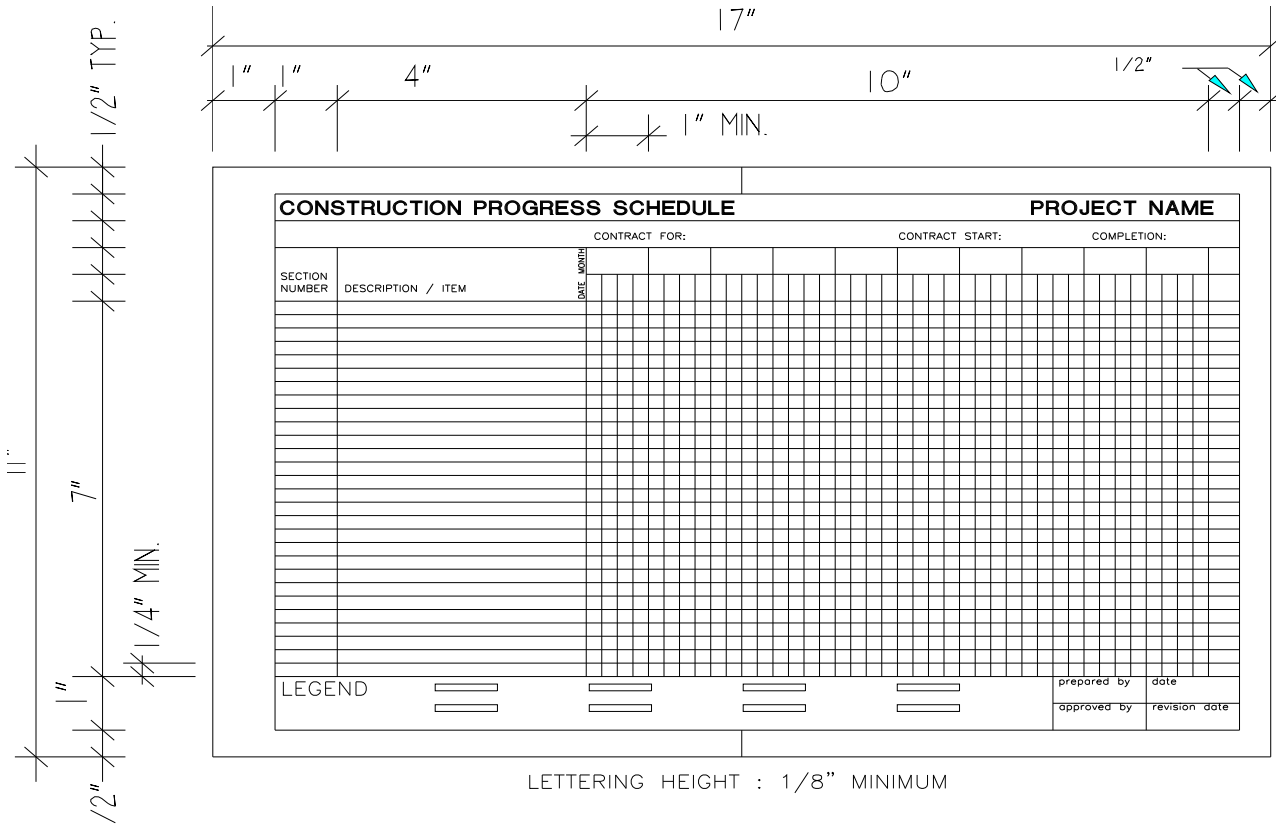
PART 3 - EXECUTION (Not Used)

Attachment: Format for Construction Schedule

END OF SECTION 01 32 00

SECTION 01 32 00 - PROJECT SCHEDULE - Attachment #1

FORMAT FOR
CONSTRUCTION SCHEDULE



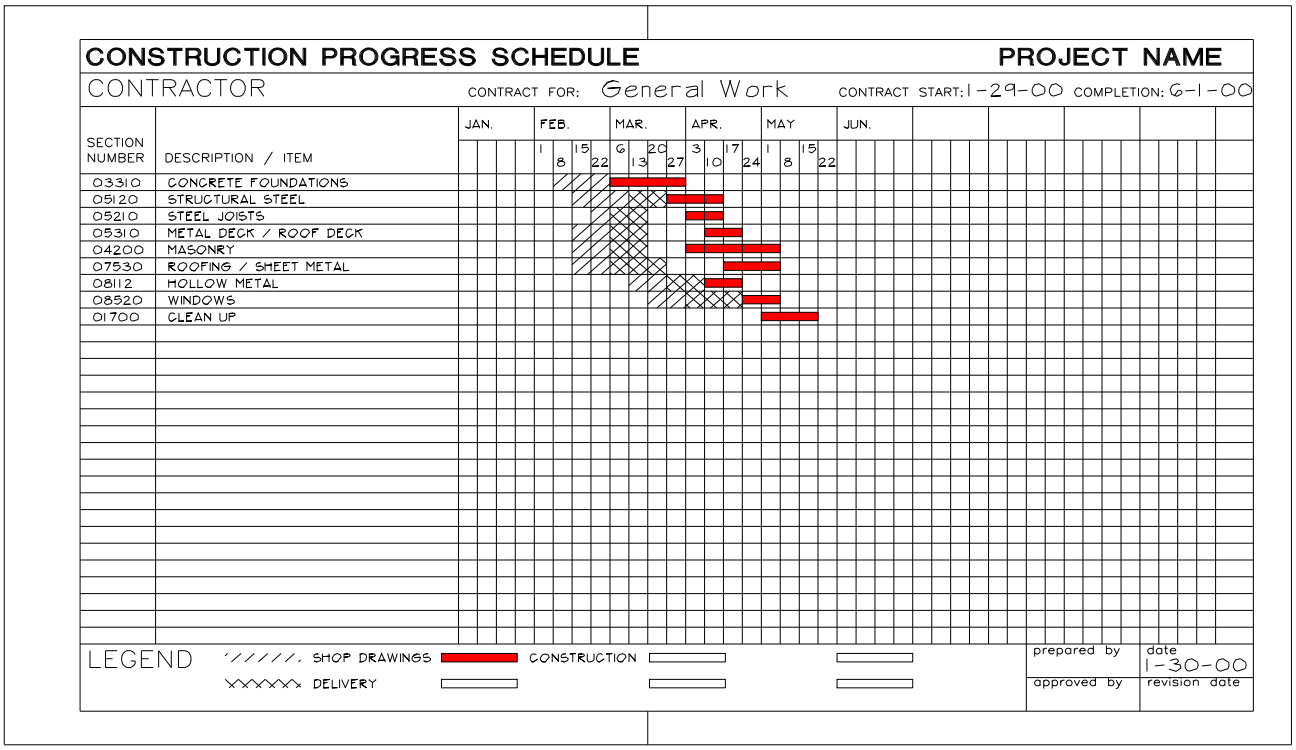
Format

Provide separate bar for each item in sequential order from beginning of Project to completion with the following information included for each item:

Related Technical Specification number.
Distinct graphic delineation, indicating area of building where schedule item in located.
Shop drawing submittal date and required acceptance date.
Product procurement date and anticipated delivery date.
Projected start and completion dates for each item.

SECTION 01 32 00 - PROJECT SCHEDULE - Attachment #1

FORMAT FOR
CONSTRUCTION SCHEDULE



Sample

Provide separate bar for each item in sequential order from beginning of Project to completion with the following information included for each item:

Related Technical Specification number.
Distinct graphic delineation, indicating area of building where schedule item in located.
Shop drawing submittal date and required acceptance date.
Product procurement date and anticipated delivery date.
Projected start and completion dates for each item.

SECTION 01 33 00 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

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

1. Process designated submittals for the Project electronically through designated Electronic Submittal System. PDF files must be opened, viewed, modified and printed using Adobe Acrobat PDF software to view reviewer comments/stamps.

1.3 DEFINITIONS

A. Action Submittals: Written and graphic information and physical samples that require Architect's and Construction Manager's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."

B. As-Specified Products: Products to be incorporated into Project as specified by manufacturer name and product designation and including all options in Part 2 of technical specifications, intended to be installed as specified in Part 3 of technical specifications, and from a product category specifically identified as eligible to be considered as an "as-specified product" in the Action Submittals Article in Part 1 of technical specifications.

C. Informational Submittals: Written and graphic information and physical samples that do not require Architect's and Construction Manager's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."

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

E. Electronic Submittal System: A method to transmit certain electronic submittals between the Contractor, Construction Manager, Architect, and Owner, using Submittal Exchange website service.

1. For consistency, the standard file format will be PDF. Convert paper originals and other file formats to PDF prior to submission.

2. In the event of system malfunction, process submittals in accordance with the Architect's instructions, until the system malfunction has been corrected.

3. For this Project, process the following submittal types through the designated electronic submittal system:

    a. Product Data.
    b. Sustainable Design Submittals.
    c. Shop Drawings.
    d. Product Schedules.
    e. Qualification Data.
    f. Certificates (Welding, Installer, Manufacturer, Product, and Material, as applicable).
    g. Test Reports (Material, Product, Preconstruction, Compatibility, and Field, as applicable).
    h. Research Reports.
    i. Warranty (sample).
    j. Design Data, including calculations.
    k. Coordination Drawings.

4. For Samples, provide electronic submittal of Sample cover sheet, identifying location and actual delivery date of Samples. Deliver Samples to location (Architect's office, Project site, etc.) as directed by the Architect.

1.4 COLOR SCHEDULE

A. Color Schedule: Within 30 days after date of Notice of Award, submit a complete list of proposed manufacturers and complete product designations (i.e. model, grade, series, product line, etc.) for each item requiring color selection by Architect.

1.5 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

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

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.

2. Where indicated, submit all submittal items required for each Specification Section concurrently.

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

    a. Architect and Construction Manager reserve the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

B. Processing Time: Allow sufficient time for submittal review, including time for resubmittals. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

C. Electronic Submittals: Identify and incorporate information in each electronic submittal file as follows:

1. Include a cover sheet on each submittal item for identification. Do not combine different submittals under same cover sheet; only one submittal is to be provided per email.

   a. Cover Sheet Form: Use PDF version of sample form included in Project Manual. Complete each item on form, sign and date. Architect will furnish PDF version of sample form.

2. Name submittal file as directed by Architect.

3. Transmit each submittal via Electronic Submittal System.

4. Transmit each submittal to Architect using the Submittal Exchange website www.submittalexchange.com.

D. Resubmittals: Make resubmittals in same form and, for non-electronic submittals, in the same number of copies as initial submittal.

1. Note date and content of revision in label or title block and clearly indicate extent of revision.

2. Resubmit submittals until they are marked with approval notation from Architect and Construction Manager.

3. Refer to the General Conditions for provisions allowing Owner to obtain reimbursement from the Contractor for amounts paid to the Architect for evaluation of certain resubmittals.

E. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities.

F. Use for Construction: Retain complete electronic copies of submittals on Project site during Construction. Also maintain one complete set of hard paper copies of all approved submittals on Project site during Construction. Use only final action submittals that are marked with approval notation from Architect and Construction Manager.

G. Use of As-Specified Verification Form: The As-Specified Verification Form is intended to reduce certain action submittal paperwork for select products to be incorporated into the Work. If product to be incorporated into Project is specified by name and product designation in Part 2 of the Technical Specification Section and is from a product category specifically identified as eligible to be considered as an “as-specified product” in the Action Submittals Article in Part 1 of technical specifications, submit **“As-Specified Verification Form”** attached to this Specification Section.

1.6 ENVIRONMENTAL REQUIREMENTS

A. All products provided for use in construction of this Project are to be free of asbestos. Refer to Division 01 Section "Closeout Procedures" for certification required to be provided. The Owner may provide random testing of installed products/ construction for asbestos content. Any Contractor-installed product found to contain asbestos shall be classified as defective work. Defective work shall be corrected by the Contractor as specified in the General Conditions.

1.7 SUBMITTAL PROCEDURES, GENERAL

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

1.8 ELECTRONIC SUBMITTAL REQUIREMENTS

A. Use the designated electronic submittal system for submittals in this Article.

1. Review and apply electronic stamp certifying that the submittal complies with the requirements of the Contract Documents including verification of manufacturer / product, dimensions and coordination of information with other parts of the work.

2. Transmit each submittal to Construction Manager and Architect using the Submittal Exchange website, www.submittalexchange.com.

3. For Action Submittals, Architect / Engineer and Construction Manager review comments will be made available on the Submittal Exchange website for downloading. Contractor will receive email notice of completed review.

4. Distribution of reviewed submittals to subcontractors and suppliers is the responsibility of the Contractor.

5. After award of contract, training will be provided by Submittal Exchange regarding use of website and PDF submittals. Contact Submittal Exchange at 1-800-714-0024.

6. Internet Service and Equipment Requirements:

    a. Email address and Internet access at Contractor's main office.
    b. Adobe Acrobat (www.adobe.com), for applying electronic stamps and comments.

7. Contractor shall bear the cost of the Submittal Exchange project subscription.

8. Retain one electronic copy of all approved submittals, as part of the project records required at Project Closeout.

9. Tetra Tech Architects and Engineers will be the Submittal Exchange Project Leader and Subscriber.

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

1. Mark submittal to show which products and options are applicable.

2. Include the following information, as applicable:

   a. Manufacturer's catalog cuts.
   b. Statement of compliance with specified referenced standards.
   c. Testing by recognized testing agency.

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

   a. Printed performance curves.
   b. Clearances required to other construction, if not indicated on accompanying Shop Drawings.

C. As-Specified Submittals: Complete the **"As-Specified Verification Form"**.

1. Refer to the Action Submittals Article of technical specification sections. If the product to be incorporated into the Project is an "as-specified product" as defined in this Section, then submit **"As-Specified Verification Form"** in lieu of Product Data, otherwise submit full Product Data.

2. Do not use **"As-Specified Verification Form"** unless specifically indicated in technical specification.

3. The **"As-Specified Verification Form"** alone serves as the submittal for the specific product and no additional action submittal data is due at the time of the submittal. The full specific product technical data, however, is required to be included in the Operation and Maintenance Manual. Comply with requirements specified in Division 01 Section "Operation and Maintenance Data".

D. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data, unless submittal based on Architect's digital data drawing files is otherwise permitted.

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

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

E. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:

1. Type of product. Include unique identifier for each product indicated in the Contract Documents or assigned by Contractor if none is indicated.
2. Manufacturer and product name, and model number if applicable.
3. Number and name of room or space.

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

G. Certificates:

1. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS or ASME forms as applicable. Include names of firms and personnel certified.

2. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.

3. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.

4. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.

5. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.

H. Test Reports:

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

2. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

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

4. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.

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

I. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project.

J. Warranty: Submit sample warranties as required in individual Specification Sections.

K. Design Data: Prepare and submit written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

L. Coordination Drawing Submittals: Comply with requirements specified in Division 01 Section "Project Management and Coordination."

1.9 SUBMITTAL REQUIREMENTS FOR COMMISSIONING

A. Provide the Commissioning Authority with a copy of all submittals for equipment to be commissioned.

1. The Commissioning Authority will review and approve Contractor submittals applicable to systems being commissioned for compliance with commissioning needs, concurrent with the Architect's review.

B. Data for Commissioning:

1. Refer to the technical Division Commissioning Section for listing of systems to be commissioned. Provide specific information needed about each piece of commissioned equipment or system in submittal as required to facilitate commissioning. Typically this will include detailed manufacturer installation and start-up, operating, troubleshooting and maintenance procedures, full details of any Ownerr-contracted tests, fan and pump curves, full factory testing reports, if any, and full warranty information, including all responsibilities of the Owner to keep the warranty in force clearly identified. In addition, the installation and checkout materials that are actually shipped inside the equipment and the actual field checkout sheet forms to be used by the factory or field technicians for pre-functional testing shall be submitted to the Commissioning Authority.

2. The Commissioning Authority may request further documentation necessary for the commissioning process. This data request may be made prior to submittals, during review, or subsequently as additional requirements become evident.

3. Much of this information is contained in the regular Operation and Maintenance (O&M) manual submittals normally submitted in the Project. For commissioned projects, this information is typically required prior to the regular formal O&M manual submittals and will be duplicated therein, facilitating the later creation of the O&M manual.

C. Contractor’s responsibility for deviations in submittals from requirements of the Contract Documents is not relieved by the Commissioning Authority’s review .

1.10 NON-ELECTRONIC SUBMITTAL REQUIREMENTS

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

1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.

2. Identification: Attach label on unexposed side of Samples that includes the following:

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

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

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

   a. Number of Samples: Submit two full sets of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Deliver one set to Architect’s office, deliver the other set to the construction trailer at the job site.

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

   a. Number of Samples: Submit two sets of Samples. Deliver one set to Architect’s office, deliver the other set to the construction trailer at the job site.

      1) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.

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

1. Name, address, telephone number, and email address of entity performing subcontract or supplying products.

2. Number and title of related Specification Section(s) covered by subcontract.

3. Submit subcontract list in the following format:

    a. Number of Copies: Four paper copies of subcontractor list, unless otherwise indicated. Architect will return one copy.

C. List of Key Personnel Names: No later than 15 days after date of Notice of Award, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site.

1. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including emergency, office, and cellular telephone numbers and email addresses.

    a. Number of Copies: Four paper copies of key personnel list, unless otherwise indicated.

1.11 MISCELLANEOUS SUBMITTAL REQUIREMENTS

A. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Division 01 Section "Closeout Procedures."

B. Maintenance Data: Comply with requirements specified in Division 01 Section "Operation and Maintenance Data."

1.12 CONTRACTOR'S REVIEW

A. Action Submittals and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Identify any deviations from Contract Document requirements. Mark cover sheet with approval before submitting to Architect and Construction Manager.

1. Sign and date statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.
2. If using Adobe Acrobat to electronically sign the Submittal Cover Sheet do not use the Certify Sign, Time Stamp feature as this will lock the document for further editing.

1.13 ARCHITECT'S AND CONSTRUCTION MANAGER'S ACTION

A. General: Architect and Construction Manager will not review submittals that do not bear Contractor's approval and will return them without action.

B. Action Submittals: Architect and Construction Manager will review each submittal, make marks to indicate corrections or revisions required, and return it. Architect and Construction Manager will mark submittal appropriately to indicate action, as follows:

1. Final Unrestricted Release: Where the submittal is marked "Approved," the Work covered by the submittal may proceed provided it complies with the Contract Documents. Final acceptance will depend on that compliance.

2. Final-but-Restricted Release: Where the submittal is marked "Approved As Noted," the Work covered by the submittal may proceed provided it complies both with Architect's notations and corrections on the submittal and the Contract Documents. Final acceptance will depend on that compliance.

3. Rejected: Where the submittal is marked "Rejected," do not proceed with the Work covered by the submittal. Prepare a new submittal for a product that complies with the Contract Documents.

4. Incomplete - Resubmit: Where the submittal is marked "Incomplete, Submit Additional Information," do not proceed with the Work covered by the submittal. Prepare additional information requested, or required by the Contract Documents, that indicates compliance with requirements, and resubmit.

C. Informational Submittals: Architect and Construction Manager will review each submittal and will not return it, or will return it if it does not comply with requirements.

D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.

E. Limit information submitted to specific products indicated. Do not submit extraneous matter. Submittals containing excessive extraneous matter will be returned for resubmittal without review.

F. Submittals not required by the Contract Documents may be returned by the Architect without action.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

Attachments: Tt Cover Sheet
As-Specified Verification Form
Tt Cover Sheet for Closeout Submittals (Sections 01 78 23 and 01 78 39)
Quality Environmental Solutions & Technologies, Inc. (QuES&T) Cover Sheet to be used ONLY for Submittals for Section 02 82 00

END OF SECTION 01 33 00

CONTRACTOR: _____ **SUBMITTAL DATE** ____/____ /____

_____ Check following as applicable:

ARCHITECT: Tetra Tech Architects & Engineers

☐ First Submission

☐ Re-Submission No. ____

PROJECT IDENTIFICATION

Architect's
Project No.: 17597-22002

Proj. Name: Reconstruction Wallkill Central School District

Location: Wallkill, New York

PRODUCT IDENTIFICATION

Specification Section No. _____

Name of Product: _____

_____

Name of Manufacturer: _____

SUBCONTRACTOR

_____

SUPPLIER

_____

RELATIONSHIP TO STRUCTURE

Building
Name _____

_____
(Room #) *(Room Name)*

Contract Drawing No.: _____

RESERVED FOR USE BY TETRA TECH

ACTION SUBMITTAL:

☐ Approved

☐ Approved As Noted

☐ Rejected

☐ Incomplete, Submit Additional Information

INFORMATIONAL SUBMITTAL:

☐ No Action Taken

☐ Returned for Resubmittal

Reviewed By: _____

Date: _____

Reviewed only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. Review not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. Review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences or procedures.

DEVIATION FROM CONTRACT DOCUMENTS: _____

_____

CONTRACTOR COMMENTS: _____

_____

ARCHITECT'S COMMENTS: _____

_____

CONTRACTOR'S STAMP

CONTRACTOR'S CERTIFICATION
I CERTIFY THAT THIS SUBMITTAL HAS BEEN REVIEWED AND APPROVED BY THE CONTRACTOR IN ACCORDANCE WITH THE GENERAL CONDITIONS. PRODUCTS/MATERIALS ARE FREE OF ASBESTOS AS REQUIRED BY THE CONTRACT DOCUMENTS.

BY _____

CONSTRUCTION MANAGER'S CERTIFICATION
I CERTIFY THAT THIS SUBMITTAL HAS BEEN REVIEWED AND APPROVED BY THE CONSTRUCTION MANAGER IN ACCORDANCE WITH THE GENERAL CONDITIONS.

BY _____

CM Submittal No. _____

TETRA TECH
ARCHITECTS & ENGINEERS

As-Specified Verification Form

Project Number: 17597-22002

Project Title: Reconstruction to Wallkill Central School District

Technical Specification Section: _____
(Include Section Number and Title as shown in Project Manual)

Specified Product: _____
(Include manufacturer's name and product designation)

The undersigned, hereinafter called the Contractor, hereby warrants that the Specified Product listed above will be incorporated into the Project in accordance with requirements specified in the Technical Specification Section identified above without modification or alteration.

By acceptance of this form, Tetra Tech Architects & Engineers (hereinafter called Tetra Tech), agrees that limited submittals identified in the Technical Specification Section identified above are not required, unless otherwise stated in the Submittals article in the Technical Specification Section.

The Contractor is advised that use of this As-Specified Verification Form does not relieve the Contractor from providing remaining submittal documentation required in Technical Specification sections and all information required in Division 1 Closeout section of the Project Manual or from complying with requirements of the General Conditions.

Products/Materials are free of asbestos as required by the Contract Documents.

_____
(Name of Contractor)

_____
(Authorized Signature)

_____
(Title of Signatory)

_____
(Date)

RESERVED FOR USE BY TETRA TECH

ACTION SUBMITTAL:

☐ Approved / Approved As Noted

☐ Rejected

Reviewed By: _____

Date: _____

Reviewed only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. Review not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. Review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences or procedures.

ARCHITECT'S COMMENTS: _____

CONTRACTOR: _____

_____

SUBMITTAL DATE ____/____/____

Check following as applicable:

☐ First Submission ____

☐ Re-Submission No. ____

ARCHITECT: Tetra Tech Architects & Engineers

PROJECT IDENTIFICATION

Architect's
Project No.: 17597-22002

Proj. Name: Reconstruction Wallkill Central School District

Location: Wallkill, New York

PRODUCT IDENTIFICATION

Specification Section No. **01 78 23 OR 01 78 39** *(circle correct one)*

Name of Product: _____

_____

Name of Manufacturer: _____

SUBCONTRACTOR: _____

SUPPLIER: _____

RESERVED FOR USE BY TETRA TECH

INFORMATIONAL SUBMITTAL:

☐ No Action Taken

☐ Returned for Resubmittal

Reviewed By: _____

Date: _____

Reviewed only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. Review not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. Review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences or procedures.

DEVIATION FROM CONTRACT DOCUMENTS: _____

_____

CONTRACTOR COMMENTS: _____

_____

CONSTRUCTION MANAGER'S COMMENTS: _____

_____

ARCHITECT'S COMMENTS: _____

_____

CONTRACTOR'S STAMP

CONTRACTOR'S CERTIFICATION

I CERTIFY THAT THIS SUBMITTAL HAS BEEN REVIEWED AND APPROVED BY THE CONTRACTOR IN ACCORDANCE WITH THE GENERAL CONDITIONS. PRODUCTS/MATERIALS ARE FREE OF ASBESTOS AS REQUIRED BY THE CONTRACT DOCUMENTS.

BY _____

CONSTRUCTION MANAGER'S CERTIFICATION

I CERTIFY THAT THIS SUBMITTAL HAS BEEN REVIEWED BY THE CONSTRUCTION MANAGER IN ACCORDANCE WITH THE GENERAL CONDITIONS. AND IN ACCORDANCE WITH THE CONSTRUCTION MANAGER'S CONTRACTUAL OBLIGATIONS WITH THE OWNER.

Approved _____ Rejected_____

BY _____

CM Submittal No. _____

CONTRACTOR: _____ **SUBMITTAL DATE** ____/____ /____

_____ Check following as applicable:

CONSULTANT: _____ ☐ First Submission ____

☐ Re-Submission No. ____

PROJECT IDENTIFICATION

Architect's
Project No.: 17597-22002

Proj. Name: Reconstruction Wallkill Central School District

Location: Wallkill, New York

PRODUCT IDENTIFICATION

Specification Section No._____

Name of Product:_____

_____

Name of Manufacturer:_____

SUBCONTRACTOR: _____

_____

SUPPLIER: _____

RELATIONSHIP TO STRUCTURE: _____

_____

Building Name:_____

_____
(Room #) *(Room Name)*

Contract Drawing No.:_____

Quality Environmental Solutions & Technologies, Inc.
OWNER'S DIRECT CONSULTANT

ACTION SUBMITTAL:

☐ Approved

☐ Approved As Noted

☐ Rejected

☐ Incomplete, Submit Additional Information

INFORMATIONAL SUBMITTAL:

☐ No Action Taken

☐ Returned for Resubmittal

Reviewed By: _____

Date: _____

DEVIATION FROM CONTRACT DOCUMENTS: _____

_____

CONTRACTOR COMMENTS: _____

_____

OWNER'S CONSULANT COMMENTS: _____

_____

CONTRACTOR'S STAMP

CONTRACTOR'S CERTIFICATION
I CERTIFY THAT THIS SUBMITTAL HAS BEEN REVIEWED AND APPROVED BY THE CONTRACTOR IN ACCORDANCE WITH THE GENERAL CONDITIONS. PRODUCTS/MATERIALS ARE FREE OF ASBESTOS AS REQUIRED BY THE CONTRACT DOCUMENTS.

BY _____

CONSTRUCTION MANAGER'S CERTIFICATION
I CERTIFY THAT THIS SUBMITTAL HAS BEEN REVIEWED AND APPROVED BY THE CONSTRUCTION MANAGER IN ACCORDANCE WITH THE GENERAL CONDITIONS.

BY _____

CM Submittal No. _____

SECTION 01 35 26 – GOVERNMENTAL SAFETY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Safety requirements included in 8 NYCRR 155.5 Uniform Safety Standards for School Construction and Maintenance Projects.

1.3 PERFORMANCE REQUIREMENTS

A. General Performance: Provide all measures, including (but not limited to) materials, equipment, and procedures, required to comply with following requirements of 8 NYCRR 155.5 Uniform Safety Standards for School Construction and Maintenance Projects.

B. Certificate of Occupancy:

1. 8 NYCRR 155.5 (a): "The occupied portion of any school building shall always comply with the minimum requirements necessary to maintain a certificate of occupancy."

C. General Safety and Security Standards for Construction Projects:

1. 8 NYCRR 155.5 (e)(1): "All construction materials shall be stored in a safe and secure manner."

2. 8 NYCRR 155.5 (e)(2): "Fences around construction supplies or debris shall be maintained."

3. 8 NYCRR 155.5 (e)(3): "Gates shall always be locked unless a worker is in attendance to prevent unauthorized entry."

4. 8 NYCRR 155.5 (e)(4): "During exterior renovation work, overhead protection shall be provided for any sidewalks or areas immediately beneath the work site or such areas shall be fenced off and provided with warning signs to prevent entry."

5. 8 NYCRR 155.5 (e)(5): "Workers shall be required to wear photo identification badges at all times for identification and security purposes while working at occupied sites."

D. Separation of Construction Areas from Occupied Spaces:

1. 8 NYCRR 155.5 (f): "Construction areas which are under the control of a contractor and therefore not occupied by district staff or students shall be separated from occupied areas. Provisions shall be made to prevent the passage of dust and contaminants into occupied parts of the building. Periodic inspection and repairs of the containment barriers must be made to prevent exposure to dust or contaminants. Gypsum board must be used in exit ways or other areas that require fire rated separation. Heavy duty plastic sheeting may be used only for a vapor, fine dust or air infiltration barrier, and shall not be used to separate occupied spaces from construction areas."

2. 8 NYCRR 155.5 (f)(1): "A specific stairwell and/or elevator should be assigned for construction worker use during work hours. In general, workers may not use corridors, stairs or elevators designated for students or school staff."

E. Cleaning Occupied Areas:

1. 8 NYCRR 155.5 (f)(2): "Large amounts of debris must be removed by using enclosed chutes or a similar sealed system. There shall be no movement of debris through halls of occupied spaces of the building. No material shall be dropped or thrown outside the walls of the building."

2. 8 NYCRR 155.5 (f)(3): "All occupied parts of the building affected by renovation activity shall be cleaned at the close of each workday. School buildings occupied during a construction project shall maintain required health, safety and educational capabilities at all times that classes are in session."

F. Exiting and Ventilation:

1. 8 NYCRR 155.5(g): Maintain exiting and ventilation during school construction projects.
2. 8 NYCRR 155.5(g)(1): "Required exits, temporary stairs, ramps, exit signs, and door hardware shall be provided at all times."
3. 8 NYCRR 155.5(g)(2): "Required ventilation to occupied spaces affected by construction will be maintained during the project."

G. Noise Control:

1. 8 NYCRR 155.5 (i): "Construction and maintenance operations shall not produce noise in excess of 60 dba in occupied spaces or shall be scheduled for times when the building or affected building spaces are not occupied or acoustical abatement measures shall be taken."

H. Control of Fumes, Gases and Contaminants:

1. 8 NYCRR 155.5 (j): The contractor shall be responsible for the control of chemical fumes, gases, and other contaminants produced by welding, gasoline or diesel engines, roofing, paving, painting, and other fumes to ensure they do not enter occupied portions of the building or air intakes.

I. “Off-Gassing” of Volatile Organic Compounds:

1. 8 NYCRR 155.5 (j)(1): The contractor shall be responsible to ensure that activities and materials which result in "off-gassing" of volatile organic compounds such as glues, paint, furniture, carpeting, wall coverings, drapery, etc. are scheduled, cured or ventilated in accordance with manufacturer’s recommendations before a space can be occupied.

J. Asbestos Isolation:

1. 8 NYCRR 155.5 (k): “Large and small asbestos abatement projects as defined by 12 NYCRR 56 shall not be performed while the building is occupied.” Note, it is NYSED’s interpretation that the term "building", as referenced in this section of 8 NYCRR 155.5, means a wing or major section of a building that can be completely isolated from the rest of the building with sealed non-combustible construction. The isolated portion of the building must contain exits that do not pass through the occupied portion and ventilation systems must be physically separated and sealed at the isolation barrier.

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

K. Lead and Asbestos Testing:

1. 8 NYCRR 155.5 (c)(1): “All school areas to be disturbed during renovation or demolition shall be tested for lead and asbestos.”

a. Asbestos and Asbestos-Containing Materials:

1) Be advised that asbestos and asbestos-containing materials are required to be abated as part of this Project. Refer to Division 02 Section “Asbestos Abatement”.

a) The extent of asbestos to be abated as part of the Project is indicated on Drawings included in the Contract Documents.

b) Prior to beginning Work, review Owner’s “Asbestos Management Plan” to ensure asbestos or asbestos-containing materials identified in that document are not disturbed.

2) Be advised that disturbance of asbestos and asbestos-containing materials is not anticipated as part of this Project.

a) Prior to beginning Work, review Owner’s “Asbestos Management Plan” to ensure asbestos or asbestos-containing materials identified in that document are not disturbed.

3) Be advised that if materials suspected to be asbestos, or to contain asbestos, that are not included in the Project and not identified in the Contract Documents are encountered during construction, immediately notify Owner and take precautions as required to avoid disturbing materials until directed by Owner.

4) Transmission Electron Microscopy (TEM): All asbestos abatement work that requires clearance air sampling in accordance with New York State Industrial Code Rule 56 shall have clearance air samples collected and analyzed using Transmission Electron Microscopy as per the Asbestos Hazard Emergency Response Act (40 CFR 763). Refer to Division 02 Section "Asbestos Abatement".

b. Lead and Lead-Containing Materials:

1) Be advised that a lead inspection has been performed as required by New York State Education Department and a copy of the lead inspection report is available at the Owner's offices.

L. Code Rule 56:

1. 8 NYCRR 155.5(k): "All asbestos abatement projects shall comply with all applicable Federal and State laws including but not limited to the New York State Department of Labor industrial code rule 56 (12 NYCRR 56), and the Federal Asbestos Hazard Emergency Response Act (AHERA), 40 CFR part 763 (Code of Federal Regulations, 1998 Edition, Superintendent of Public Documents, U.S. Government Printing Office, Washington, DC 20402; 1998; available at the Office of Facilities Planning, Education Building Annex, Room 360, State Education Department, Albany, NY 12234."

M. Lead:

1. 8 NYCRR 155.5 (l): Surfaces that will be disturbed by reconstruction must have a determination made as to the presence of lead. Projects which disturb surfaces that contain lead shall have in the specifications a plan prepared by a certified Lead Risk Assessor or Supervisor which details provisions for occupant protection, worksite preparation, work methods, cleaning and clearance testing which are in general accordance with the HUD Guidelines.

a. Be advised that lead and lead-containing materials are required to be disturbed or removed as part of this Project. Refer to Division 02 Section "Lead-Safe Work Practices".

1) The extent of lead to be disturbed or removed as part of the project is indicated on Drawings included in the Contract Documents.

b. Be advised that disturbance of lead and lead-containing materials is not anticipated as part of this Project.

c. Contractor is responsible for complying with requirements of all applicable federal, state and local regulations, including (but not limited to) OSHA Lead in Construction Standard 29 CFR 1926.62, when construction activities involve disturbance of materials containing 1.0 mg/sq cm or 0.5 percent of lead or less, including (but not limited to) lead-based paint, ceramic tile, and similar materials.

d. If materials suspected to contain lead above 1.0 mg/sq cm or above 0.5 percent that are not included in Project or identified in Contract Documents are encountered during construction, immediately notify Owner and take applicable precautions to avoid disturbing materials until directed by Owner.

N. Disposal of Lead Abatement Waste:

1. Test all debris from lead abatement activities to determine whether it is hazardous or non-hazardous waste.

2. Transport and dispose of debris determined to be hazardous waste in accordance with applicable regulations.

3. Package, label, and mark all hazardous waste materials in accordance with applicable requirements of 49 CFR 173, 178 and 179.

4. Maintain hazardous waste manifest from date of transport until date of disposal, destruction or recycling.

5. Return fully executed hazardous waste manifests to Owner within 60 days after date waste accepted by initial transporter.

6. Dispose of material determined to be Construction and Demolition Debris in accordance with 6 NYCRR 360 and 364. Provide trip tickets or other documentation clearly identifying generating site, Owner, transporter, disposal site and amount of material removed from site, transported to and disposed of at disposal site.

7. Refer to Division 02 Section “Lead-Safe Work Practices” for additional requirements.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 35 26

SECTION 01 40 00 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

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

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

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

2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.

3. Requirements for Contractor to provide quality-assurance and -control services required by Architect, Owner, Construction Manager, or authorities having jurisdiction are not limited by provisions of this Section.

1.3 DEFINITIONS

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

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

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

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

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

1.4 CONFLICTING REQUIREMENTS

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

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

1.5 SUBMITTALS

A. Informational Submittals:

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

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

    a. Specification Section number and title.
    b. Entity responsible for performing tests and inspections.
    c. Description of test and inspection.
    d. Identification of applicable standards.
    e. Identification of test and inspection methods.
    f. Number of tests and inspections required.
    g. Time schedule or time span for tests and inspections.

1.6 REPORTS AND DOCUMENTS

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

1. Date of issue.
2. Project title and number.
3. Name, address, and telephone number of testing agency.
4. Dates and locations of samples and tests or inspections.
5. Names of individuals making tests and inspections.

6. Description of the Work and test and inspection method.
7. Identification of product and Specification Section.
8. Complete test or inspection data.
9. Test and inspection results and an interpretation of test results.
10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
12. Name and signature of laboratory inspector.
13. Recommendations on retesting and reinspecting.

B. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.7 QUALITY ASSURANCE

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

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

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

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

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

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

1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.

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

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

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

1. Build mockups in location and of size indicated or, if not indicated, as directed by Architect or Construction Manager.
2. Notify Architect and Construction Manager seven days in advance of dates and times when mockups will be constructed.
3. Demonstrate the proposed range of aesthetic effects and workmanship.
4. Obtain Architect's and Construction Manager'] approval of mockups before starting work, fabrication, or construction.
5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
6. Demolish and remove mockups when directed unless otherwise indicated.

1.8 QUALITY CONTROL

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

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

2. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.

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

1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.

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

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

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

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

5. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.

6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

C. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Division 01 Section "Submittal Procedures."

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

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

F. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:

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

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

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

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

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

1.9 SPECIAL TESTS AND INSPECTIONS

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

1. Notifying Architect, Construction Manager, and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.

2. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect, through Construction Manager, with copy to Contractor and to authorities having jurisdiction.

3. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.

4. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.

5. Retesting and reinspecting corrected work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

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

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

B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Architect's and Construction Manager's, reference during normal working hours.

3.2 REPAIR AND PROTECTION

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

1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Division 01 Section "Execution."

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

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

Attachment: Statement of Special Inspections

END OF SECTION 01 40 00

TETRA TECH
ARCHITECTS & ENGINEERS

STATEMENT OF SPECIAL INSPECTIONS

Project: *Wallkill CSD – 2022 Capital Project – Phase 2*

Location: *Wallkill, NY*

Owner: *Wallkill Central School District*

This *Statement of Special Inspections* is submitted as a condition for permit issuance in accordance with the Special Inspection and Structural Testing requirements of the Building Code of New York State. It includes a schedule of Special Inspection services applicable to this project. *Refer to individual technical specification sections for additional testing requirements*.

This document includes the following parts:

Qualifications of Inspectors and Testing Technicians

Schedule of Special Inspection Services

Qualifications of Inspectors and Testing Technicians

The qualifications of all personnel performing Special Inspection and testing activities are subject to the approval of the Building Official. The credentials of all Inspectors and testing technicians shall be provided if requested.

Key for Minimum Qualifications of Inspection Agents:

When the Registered Design Professional in Responsible Charge deems it appropriate that the individual performing a stipulated test or inspection have a specific certification or license as indicated below, such designation shall appear below the *Qualifications* on the Schedule.

PE	Structural Engineer – a licensed PE specializing in the design of building structures
PE/GE	Geotechnical Engineer – a licensed PE specializing in soil mechanics and foundations
EIT	Engineer-In-Training – a graduate engineer who has passed the Fundamentals of Engineering examination

American Concrete Institute (ACI) Certification

ACI-CFTT	Concrete Field Testing Technician – Grade 1
ACI-CCI	Concrete Construction Inspector
ACI-LTT	Laboratory Testing Technician – Grade 1&2
ACI-STT	Strength Testing Technician

American Welding Society (AWS) Certification

AWS-CWI	Certified Welding Inspector
AWS/AISC-SSI	Certified Structural Steel Inspector

American Society of Non-Destructive Testing (ASNT) Certification

ASNT	Non-Destructive Testing Technician – Level II or III.

International Code Council (ICC) Certification

ICC-SMSI	Structural Masonry Special Inspector
ICC-SWSI	Structural Steel and Welding Special Inspector
ICC-SFSI	Spray-Applied Fireproofing Special Inspector
ICC-PCSI	Prestressed Concrete Special Inspector
ICC-RCSI	Reinforced Concrete Special Inspector

National Institute for Certification in Engineering Technologies (NICET)

NICET-CT	Concrete Technician – Levels I, II, III & IV
NICET-ST	Soils Technician - Levels I, II, III & IV
NICET-GET	Geotechnical Engineering Technician - Levels I, II, III & IV

Association of the Wall and Ceilings Industries International (AWCI)

AWCI 12-B	Standard Practice for the Testing and Inspection of Field Applied Thin-Film Intumescent Fire-Resistive Materials; an Annotated Guide.

Schedule of Special Inspection Services

INSPECTION AND TESTING *("Continuous" & "Periodic" defined by the Code; refer to applicable Technical Specification Section for specific frequency requirements)*	**REQUIRED** (*Required if checked; Not Applicable if not* checked)	**TECHNICAL SPECIFICATION SECTION** (*Refer to for additional information*)	**CONTINUOUS**	**PERIODIC**
Cast-in-Place Concrete (1705.3)				
1. Inspection of reinforcing steel and verify placement	☐	03 30 53	☐	☒
2. Inspection of reinforcing steel welding:				
a. Verification of ASTM A706 material	☐	03 30 53	☐	☒
b. Inspect single-pass fillet welds, maximum 5/16"	☐	03 30 53	☐	☒
c. Inspect all other welds	☐	03 30 53	☒	☐
3. Inspection of anchors to be installed in concrete prior to and during placement	☐	03 30 53	☒	☐
4. Inspect anchors post-installed in hardened concrete				
a. Adhesive anchors installed in horizontally or upwardly inclined orientations to resist sustained tension loads.	☐	03 30 53	☒	☐
b. Mechanical anchors and adhesive anchors not defined in 4a.	☐	03 30 53	☐	☒
5. Verify use of required design mix	☐	03 30 53	☐	☒
6. Sampling fresh concrete for fabricating specimens for strength testing, perform slump and air content tests, and measure temperature of concrete	☐	03 30 53	☒	☐
7. Inspection of concrete and shotcrete placement for proper application techniques	☐	03 30 53	☒	☐
8. Verify maintenance of specified curing temperature and techniques	☐	03 30 53	☐	☒
9. Verification of in-situ concrete strength, prior to stressing of tendons in post-tensioned concrete, and prior to removal of shores and forms from beams and structural slabs	☐	03 30 53	☐	☒
10. Inspection of formwork for shape, location and dimensions of the concrete member being formed	☐	03 30 53	☐	☒
11. Inspection of post-tensioning operations	☐	03 38 16	☒	☐

Precast Concrete (1705.3)				
1. Inspection of reinforcing steel	☐	03 41 00	☐	☒
2. Verify use of required design mix	☐	03 41 00	☐	☒
3. Inspection of prestressed operations				
a. Application of prestressing forces	☐	03 41 00	☒	☐
b. Grouting of bonded prestressing tendons in the seismic-force-resisting system	☐	03 41 00	☒	☐
4. Sampling fresh concrete; slump, air content, temperature, strength test specimens	☐	03 41 00	☒	☐
5. Inspection of formwork for shape, location and dimensions of the concrete member being formed	☐	03 41 00	☐	☒
6. Inspection of concrete placement for proper application techniques	☐	03 41 00	☒	☐
7. Inspection for maintenance of specified curing temperature and techniques	☐	03 41 00	☐	☒
8. Erection of precast concrete members	☐	03 41 00, 03 48 10	☐	☒

Fabricated Items (1704.2.5 and 1705.10)				
1. Inspection of structural, load-bearing or lateral load-resisting members or assemblies as noted on Contract Documents that are fabricated in a fabricator's shop	☐	?? ?? ??	☐	☐
Exceptions: a. The fabricator has been approved to perform work without special inspections per NYSBC 1704.2.5.1. b. The members or assemblies are to be fabricated on site. Then refer to the respective material categories for inspections.				

Masonry (1705.4)				
Level 1	☐	04 20 00		
1. Prior to construction, verify certificates of compliance used in masonry construction	☐	04 20 00	☐	☐
Level 2 Level 3	☒ Level 2 ☐ Level 3	04 20 00		
1. Prior to construction, verify compliance with the approved submittals.	☒	04 20 00	☐	☐
2. Prior to construction, verify *f'm*, except where specifically exempted by the Code	☐	04 20 00	☐	☐
3. During construction, verify Slump flow and Visual Stability Index (VSI) when self-consolidating grout is delivered to the project site	☐	04 20 00	☐	☐
4. During construction, verify *f'm* for every 5,000 sqft	☐	04 20 00	☐	☐
5. During construction, verify proportions of materials in premixed or preblended mortar, and grout other than self-consolidating grout, as delivered to the project site.	☒	04 20 00	☐	☐
6. At start of masonry construction, verify to ensure compliance:				
a. Proportions of site prepared mortar.	☒	04 20 00	☐	☒
b. Grade, type and size of reinforcement, connectors, and anchor bolts.	☐	04 20 00	☐	☒
c. Sample panel construction.	☐	04 20 00	☐	☒
7. Prior to grouting, verify that the following are in compliance:				
a. Grout space	☒	04 20 00	☐	☒
b. Placement of reinforcement, connectors, and anchor bolts	☐	04 20 00	☐	☒
c. Proportions of site-prepared grout	☒	04 20 00	☐	☒
8. During construction, verify compliance of the following:				
a. Materials and procedures with the approved submittals.	☒	04 20 00	☐	☒
b. Placement of masonry units and mortar joint construction.	☐	04 20 00	☐	☒
c. Size and location of structural members.	☐	04 20 00	☐	☒
d. Type, size and location of anchors including anchorage of masonry to structural members, frames or other construction	☐	04 20 00	☐	☒
e. Welding of reinforcing bars	☐	04 20 00	☒	☐
f. Preparation, construction and protection of masonry during cold or hot weather	☒	04 20 00	☐	☒
g. Placement of grout.	☒	04 20 00	☒	☐
9. Observe preparation of grout specimens, mortar specimens and/or prisms	☒	04 20 00	☐	☒

Structural Steel (1705.2.1)				
1. Minimum inspections prior to welding per AISC 360 (including but not limited to material verification, welder qualification and fit-up of joints).	☒	05 50 00	☒	☐
2. Minimum inspections during welding per AISC 360	☒	05 50 00	☒	☐
a. Placement and installation of steel headed stud anchors	☐	05 12 00	☒	☐
b. Verification of ASTM A 706 material	☐	05 12 00	☐	☒
c. Testing of resisting flexural and axial forces in intermediate and special moment frames, and boundary elements of special reinforced concrete shear walls and shear reinforcement.	☐	05 12 00	☒	☐
3. Minimum inspections after welding per AISC 360 (including but not limited to size, length and location of welds; welds meet visual acceptance criteria; and repair activities)	☒	05 50 00	☒	☐
4. Inspection of welding via UT for CJP groove welds subject to transversely applied tension loading in butt, T-, and Corner joints				
a. Risk Category III or IV structures	☒	05 50 00	☒	☐
b. Risk Category II structures	☐	05 50 00	☐	☒
5. Minimum inspections prior to high-strength bolting (except for snug-tight joints) per AISC 360 (including but not limited to material verification of high-strength bolts, nuts, and washers; and bolting procedures)	☒	05 50 00	☒	☐
6. Minimum inspections during high-strength bolting (except for snug-tight joints) per AISC 360 (included but not limited to assemblies and positioning)	☒	05 50 00		
a. For pretension/slip-critical connections using turn-of-nut with match marking method, direct-tension-indicator method, or twist-off-type tension control bolt method.	☒	05 50 00	☐	☒
b. For pretension/slip-critical connections using calibrated wrench method or turn-of-nut method without matchmarking	☒	05 50 00	☒	☐
7. Minimum inspections after high-strength bolting per AISC 360	☒	05 50 00	☐	☒
8. Inspection of fabricated and/or erected steel to verify compliance with the construction drawings.	☒	05 50 00	☐	☒
a. Details such as bracing and stiffeners	☒	05 50 00	☐	☒
b. Member locations	☒	05 50 00	☐	☒
c. Joint details	☒	05 50 00	☐	☒
9. Inspection during placement of anchor rods and other embedded items supporting structural steel for compliance with construction drawings.	☒	05 50 00	☒	☐
8. Material verification of structural steel: Identification markings to conform to ASTM standards specified in the approved construction documents	☐	05 12 00	☐	☐

Open-Web Steel Joists and Joist Girders (1705.2.3)				
1. Installation of open-web steel joists and joist girders				
a. End connections – welded or bolted per SJI	☒	05 21 00	☐	☒
b. Bridging – horizontal or diagonal				
1. Standard bridging per SJI	☒	05 21 00	☐	☒
2. Bridging that differs from SJI specification	☒	05 21 00	☐	☒

Cold-Formed Steel Deck (1705.2.2)				
1. Inspection or Execution Tasks Prior to Deck Placement per SDI QA/QC (including but not limited to compliance of materials with construction documents)	☐	05 31 00	☐	☒
2. Inspection or Execution Tasks After to Deck Placement per SDI QA/QC (including but not limited to compliance of installation with construction documents)	☐	05 31 00	☐	☒
3. Inspection or Execution Tasks Prior to Welding per SDI QA/QC (including but not limited to verification of procedures and certifications)	☐	05 31 00	☐	☒
4. Inspection or Execution Tasks During Welding per SDI QA/QC	☐	05 31 00	☒	☐
5. Inspection or Execution Tasks After Welding per SDI QA/QC (including but not limited to size, length and location of welds; welds meet visual acceptance criteria; and repair activities)	☐	05 31 00	☐	☒
6. Inspection or Execution Tasks Prior to Mechanical Fastening per SDI QA/QC (including but not limited to material verification)	☐	05 31 00	☐	☒
7. Inspection or Execution Tasks During Mechanical Fastening per SDI QA/QC (including but not limited to verification of positioning and installation)	☐	05 31 00	☒	☐
8. Inspection or Execution Tasks After Mechanical Fastening per SDI QA/QC (including but not limited to verification of spacing, type and location; repair activities)	☐	05 31 00	☐	☒

Cold-Formed Steel Trusses (1705.2.4)				
1. For trusses spanning 60 feet or greater:				
a. Verify the temporary installation restraint/bracing is installed per the approved truss submittal package.	☐	05 40 00	☐	☒
b. Verify the permanent individual truss member restraint/bracing is installed per the approved truss submittal package.	☐	05 40 00	☐	☒

Wood Construction (170505)				
1. For Metal-plate connected wood trusses spanning 60 feet or greater:				
a. Verify the temporary installation restraint/bracing is installed per the approved truss submittal package.	☐	06 10 00, 06 16 00, 06 17 53	☐	☒
b. Verify the permanent individual truss member restraint/bracing is installed per the approved truss submittal package.	☐	06 10 00, 06 16 00, 06 17 53	☐	☒
2. Inspect High-load diaphragms for grade and thickness of sheathing material; nominal size of framing members; fastener diameter and length; fastener layout and spacing	☐	06 10 00	☐	☒

Exterior Insulation and Finish Systems (EIFS) (1705.16)				
Not required if water-resistive barrier is installed with a means of draining moisture to the exterior. Also not required for EIFS applications over masonry or concrete walls. 1. Inspection of water-resistive batter coating when installed over a sheathing substrate.	☐	07 24 13	☐	☐

Sprayed Fire-resistant Materials (1705.14)				
1. Verify surface preparation in accordance with manufacturer's written instructions.	☐	07 81 00	☐	☐
2. Verify temperature and area ventilation before and after application in accordance with manufacturer's written instructions.	☐	07 81 00	☐	☐
3. Verify thickness of sprayed fire-resistant materials				
a. Minimum of 4 measurements per 1,000 sq ft of floor, roof and wall assembly areas, or part thereof at each story.	☐	07 81 00	☐	☐
b. Minimum of 25% of structural members at each story.	☐	07 81 00	☐	☐
4. Verify density of sprayed fire-resistant materials.				
a. Minimum of one sample per 2,500 sq ft of floor, roof and wall assembly areas, or part thereof at each story.	☐	07 81 00	☐	☐
b. Minimum of one sample from each type of structural framing member per 2,500 sq ft of floor area or part thereof at each story.				
5. Verify cohesive/adhesive bond strength of sprayed fire-resistant materials.				
a. Minimum of one sample per 2,500 sq ft of floor, roof and wall assembly areas or part thereof at each story.	☐	07 81 00	☐	☐
b. Minimum of one sample from each type of structural framing member per 2,500 sq ft of floor area or part thereof at each story	☐	07 81 00	☐	☐
c. Bond tests to qualify a primer, paint, or encapsulant when acceptable bond strength performance between those coatings and the fire-resistant material has not been determined.	☐	07 81 00	☐	☐

Mastic and Intumescent Fire-resistant Coatings (1705.15)				
1. Verify surface preparation, application, and thickness when applied to structural elements and decks in accordance with AWCI 12-B	☐	07 81 23	☐	☐

Fire-Resistant Penetrations and Joints (1705.17)				
1. Inspection of through-penetrations and membrane penetration firestops in buildings in Risk Category III or IV per ASTM E2174	☐	07 84 13	☐	☐
2. Inspections of fire-resistant joint systems and perimeter fire barrier systems in buildings in Risk Category III or IV per ASTM E2393	☐	07 84 43, 07 95 13.13	☐	☐

Soils (1705.6)				
1. Verify materials below shallow foundations are adequate to achieve the design bearing capacity	☐	31 20 00	☐	☒
2. Verify excavations are extended to proper depth and have reached proper material	☐	31 20 00	☐	☒
3. Perform classification and testing of compacted fill materials	☐	31 20 00	☐	☒
4. Verify use of proper materials, densities and lift thicknesses during placement and compaction of compacted fill	☐	31 20 00	☒	☐
5. Prior to placement of compacted fill, inspect subgrade and verify that site has been prepared properly	☐	31 20 00	☐	☒

Driven Deep Foundations (1705.7)				
1. Verify element materials, sizes and lengths comply with the requirements	☐	31 62 13, 31 62 16, 31 62 19, 31 22 23	☒	☐
2. Determine capacities of test elements and conduct additional load tests, as required	☐	31 62 13, 31 62 16, 31 62 19, 31 22 23	☒	☐
3. Inspect driving operations and maintain complete and accurate records for each element	☐	31 62 13, 31 62 16, 31 62 19, 31 22 23	☒	☐
4. Verify placement locations and plumbness, confirm type and size of hammer, record number of blows per foot of penetration, determine required penetrations to achieve design capacity, record tip and butt elevations and document any damage to foundation element	☐	31 62 13, 31 62 16, 31 62 19, 31 22 23	☒	☐
5. For steel elements, perform additional special inspections in accordance with 1705.2	☐	31 62 13, 31 62 16, 31 62 19, 31 22 23	☐	☐
6. For concrete elements and concrete-filled elements, perform additional special inspections in accordance with Section 1705.3	☐	31 62 13, 31 62 16, 31 62 19, 31 22 23	☐	☐
7. For specialty elements, perform additional inspections	☐	31 62 13, 31 62 16, 31 62 19, 31 22 23	☐	☐

Cast-In-Place Deep Foundations (1705.8)				
1. Inspect drilling operations and maintain complete and accurate records for each element	☐	03 30 00	☒	☐
2. Verify placement locations and plumbness, confirm element diameters, bell diameters (if applicable), lengths, embedment into bedrock (if applicable), and adequate end bearing strata capacity. Record concrete or grout volumes.	☐	03 30 00	☒	☐
3. For concrete elements, perform tests and additional special inspections in accordance with Section 1705.3	☐	03 30 00	☐	☐

Helical Pile Foundations (1705.9)				
1. Inspect installation operations and maintain complete and accurate records for each pier	☐	??	☒	☐
2. Verify and record installation equipment used, pile dimensions, tip elevations, final depth, final installation torque other data as required	☐	??	☒	☐

Wind Resistance Inspections (1705.11)				
1. Structural wood – of elements in main windforce-resisting system				
a. Inspection of gluing operations.	☐	06 10 00, 06 16 00, 06 17 53	☒	☐
b. Inspection of nailing, bolting, anchoring and other fastening	☐	06 10 00, 06 16 00, 06 17 53	☐	☒
2. Cold-formed steel light-frame construction – of elements in main windforce-resisting systems.				
a. Inspection of welding operations	☐	05 40 00	☐	☒
b. Inspection of screw attachment, bolting, anchoring and other fastening	☐	05 40 00	☐	☒
3. Wind-resisting components:				
a. Inspection of roof covering, roof deck and roof framing connections	☐	05 12 00, 05 21 00, 05 31 00, 07 53 23	☐	☒
b. Inspection of exterior wall covering and wall connections to roof and floor diaphragms and framing	☐	04 20 00, 07 24 13, 08 41 13, 08 44 13	☐	☒

Seismic Resistance Inspections (1705.12)				
1. Structural steel:				
SDC B, C, D, E, or F – refer to 1705.12.1.1 for exceptions a. Seismic force-resisting systems – inspection in accordance with AISC 341	☐	05 12 00	☒	☐
SDC B (R>3), C (R>3), D, E, or F b. Structural steel elements - inspection in accordance with AISC 341	☐	05 12 00	☒	☐
SDC C, D, E, or F, refer to 1705.12.2 for exceptions 2. Structural wood, seismic-force-resisting systems:				
a. Inspection of field gluing operations.	☐	06 10 00, 06 17 00, 06 17 53	☒	☐
b. Inspection of nailing, bolting, anchoring and other fastening	☐	06 10 00, 06 17 00, 06 17 53	☐	☒
SDC C, D, E, or F, refer to 1705.12.3 for exceptions 3. Cold-formed steel framing - of elements in seismic-force-resisting systems				
a. Inspection of welding operations of seismic-force-resisting systems	☐	05 40 00	☐	☒
b. Inspection of screw attachment, bolting, anchoring and other fastening	☐	05 40 00	☐	☒
SDC C, D, E or F; coord with 13.2.2 of ASCE 7 4. Designated seismic systems – Inspection systems requiring Seismic Qualification per ASCE 7. Verify label, anchorage and mounting conforms to certificate of compliance	☐	??	☐	☒

5. Architectural components				
a. Inspection of erection and fastening of exterior cladding	☐		☐	☒
b. Inspection of erection and fastening of interior and exterior nonbearing walls	☐		☐	☒
c. Inspection of erection and fastening of interior and exterior veneer	☐		☐	☒
d. Access floors – inspection of anchorage	☐		☐	☒
6. Mechanical and electrical components:				
SDC C, D, E or F a. Inspection of anchorage of electrical equipment for emergency power systems	☐		☐	☒
SDC E or F b. Inspection of anchorage installation or other electrical equipment	☐		☐	☒
SDC C, D, E or F c. Inspection of installation and anchorage of piping systems and associated mechanical units designed to carry hazardous materials	☐		☐	☒
SDC C, D, E, or F d. Inspection of installation and anchorage of ductwork designed to carry hazardous materials	☐		☐	☒
SDC, C, D, E, or F e. Inspection of installation and anchorage of vibration isolation systems	☐		☐	☒
SDC, C, D, E, or F f. Inspection of installation of mechanical and electrical equipment where automatic fire sprinkler systems are installed to verify clearances	☐		☐	☒
SDC B, C, D, E or F 7. Seismic isolation system: Inspection during fabrication and installation of isolator units and energy dissipation devices that are part of the seismic isolation system	☐		☐	☒
SDC D, E or F 8. Cold-formed steel special bolted moment frames: Inspection during installation of frames part of the seismic isolation system	☐		☐	☒

Seismic Resistance Structural Testing				
1. Structural steel:				
SDC B, C, D, E, or F a. Seismic force-resisting systems: Non-destructive testing in accordance with quality assurance requirements of AISC 341	☐	05 12 00	☐	☐
b. Structural steel elements: nondestructive testing in accordance with the quality assurance requirements of AISC 341	☐	05 12 00	☐	☐
SDC B, C, D, E, or F 2. Nonstructural Components: Confirm certification of compliance of seismic qualification for supports and attachments has been submitted by manufacturer for specified systems	☐		☐	☐
SDC C, D, E or F 3. Designated seismic systems: Confirm certification of compliance of seismic qualification has been submitted for designated seismic systems	☐	??	☐	☐
SDC B, C, D, E, or F 4. Seismic isolation systems: Testing per ASCE 7, Section 17.8	☐		☐	☐

Structural Observations				
One or more of: RC IV; high-rise building; special structures as determined by RDP; required by building official 1. Structural observations for structures	☐			
SDC D, E, or F where RC III or IV or SDC E where RC I or II and > 2 stories above grade plane 2. Structural observations for seismic resistance	☐			
V = 130 mph or greater and RC III or IV 3. Structural observations for wind resistance	☐			

SECTION 01 42 00 - REFERENCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DEFINITIONS

A. "Approved": When used to convey Architect's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.

B. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."

C. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."

D. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.

E. "Install": Unload, temporarily store, unpack, assemble, erect, place, anchor, apply, work to dimension, finish, cure, protect, clean, and similar operations at Project Site.

F. "Provide": Furnish and install, complete and ready for the intended use.

1.3 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.

1. When the building code in effect for the Project cites a different edition, comply with the building code-cited edition.

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.

1.4 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 in the following list. This information is subject to change and is believed to be accurate as of the date of the Contract Documents.

1. AA - Aluminum Association (The); www.aluminum.org.
2. AABC - Associated Air Balance Council; www.aabc.com.
3. AAMA - American Architectural Manufacturers Association; www.aamanet.org.
4. AAPFCO - Association of American Plant Food Control Officials; www.aapfco.org.
5. AASHTO - American Association of State Highway and Transportation Officials; www.transportation.org.
6. AATCC - American Association of Textile Chemists and Colorists; www.aatcc.org.
7. ABBA - Air Barrier Association of America; www.airbarrier.org.
8. ABMA - American Bearing Manufacturers Association; www.americanbearings.org.
9. ACI - American Concrete Institute; (Formerly: ACI International); www.concrete.org.
10. ACPA - American Concrete Pipe Association; www.concrete-pipe.org.
11. AEIC - Association of Edison Illuminating Companies, Inc. (The); www.aeic.org.
12. AF&PA - American Forest & Paper Association; www.afandpa.org.
13. AGA - American Gas Association; www.aga.org.
14. AHAM - Association of Home Appliance Manufacturers; www.aham.org.
15. AHRI - Air-Conditioning, Heating, and Refrigeration Institute (The); www.ahrinet.org.
16. AI - Asphalt Institute; www.asphaltinstitute.org.
17. AIA - American Institute of Architects (The); www.aia.org.
18. AISC - American Institute of Steel Construction; www.aisc.org.
19. AISI - American Iron and Steel Institute; www.steel.org.
20. AITC - American Institute of Timber Construction; www.aitc-glulam.org.
21. ALSC - American Lumber Standard Committee, Incorporated; www.alsc.org.
22. AMCA - Air Movement and Control Association International, Inc.; www.amca.org.
23. ANSI - American National Standards Institute; www.ansi.org.
24. AOSA - Association of Official Seed Analysts, Inc.; www.aosaseed.com.
25. APA - APA - The Engineered Wood Association; www.apawood.org.
26. APA - Architectural Precast Association; www.archprecast.org.
27. API - American Petroleum Institute; www.api.org.
28. ARI - Air-Conditioning & Refrigeration Institute; (See AHRI).
29. ARI - American Refrigeration Institute; (See AHRI).
30. ARMA - Asphalt Roofing Manufacturers Association; www.asphaltroofing.org.
31. ASCE - American Society of Civil Engineers; www.asce.org.
32. ASCE/SEI - American Society of Civil Engineers/Structural Engineering Institute; (See ASCE).
33. ASHRAE - American Society of Heating, Refrigerating and Air-Conditioning Engineers; www.ashrae.org.
34. ASME - ASME International; (American Society of Mechanical Engineers); www.asme.org.
35. ASNT - American Society for Nondestructive Testing (The); www.asnt.org
36. ASSE - American Society of Safety Engineers (The); www.asse.org.
37. ASSE - American Society of Sanitary Engineering; www.asse-plumbing.org.
38. ASTM - ASTM International; www.astm.org.
39. ATIS - Alliance for Telecommunications Industry Solutions; www.atis.org.
40. AWCI - Association of the Wall and Ceiling Industry; www.awci.org.

41. AWEA - American Wind Energy Association; www.awea.org.
42. AWI - Architectural Woodwork Institute; www.awinet.org.
43. AWMAC - Architectural Woodwork Manufacturers Association of Canada; www.awmac.com.
44. AWPA - American Wood Protection Association; www.awpa.com.
45. AWS - American Welding Society; www.aws.org.
46. AWWA - American Water Works Association; www.awwa.org.
47. BHMA - Builders Hardware Manufacturers Association; www.buildershardware.com.
48. BIA - Brick Industry Association (The); www.gobrick.com.
49. BICSI - BICSI, Inc.; www.bicsi.org.
50. BIFMA - BIFMA International; (Business and Institutional Furniture Manufacturer's Association); www.bifma.com.
51. BISSC - Baking Industry Sanitation Standards Committee; www.bissc.org.
52. BWF - Badminton World Federation; (Formerly: International Badminton Federation); www.bwfbadminton.org.
53. CDA - Copper Development Association; www.copper.org.
54. CE – Conformite Europeenne; http://ec.europa.eu/growth/single-market/ce-marking/.
55. CEA - Canadian Electricity Association; www.electricity.ca.
56. CEA - Consumer Electronics Association; www.ce.org.
57. CFFA - Chemical Fabrics & Film Association, Inc.; www.chemicalfabricsandfilm.com.
58. CFSEI - Cold-Formed Steel Engineers Institute; www.cfsei.org.
59. CGA - Compressed Gas Association; www.cganet.com.
60. CIMA - Cellulose Insulation Manufacturers Association; www.cellulose.org.
61. CISCA - Ceilings & Interior Systems Construction Association; www.cisca.org.
62. CISPI - Cast Iron Soil Pipe Institute; www.cispi.org.
63. CLFMI - Chain Link Fence Manufacturers Institute; www.chainlinkinfo.org.
64. CPA - Composite Panel Association; www.pbmdf.com.
65. CPPA – (Formerly: Corrugated Polyethylene Pipe Association; a Division of the Plastic Pipe Institute); www.plasticpipe.org/drainage/.
66. CRI - Carpet and Rug Institute (The); www.carpet-rug.org.
67. CRRC - Cool Roof Rating Council; www.coolroofs.org.
68. CRSI - Concrete Reinforcing Steel Institute; www.crsi.org.
69. CSA - Canadian Standards Association; www.csa.ca.
70. CSA - CSA International; (Formerly: IAS - International Approval Services); www.csa-international.org.
71. CSI - Construction Specifications Institute (The); www.csinet.org.
72. CSSB - Cedar Shake & Shingle Bureau; www.cedarbureau.org.
73. CTI - Cooling Technology Institute; (Formerly: Cooling Tower Institute); www.cti.org.
74. CWC - Composite Wood Council; (See CPA).
75. DASMA - Door and Access Systems Manufacturers Association; www.dasma.com.
76. DHI - Door and Hardware Institute; www.dhi.org.
77. ECA - Electronic Components Association;(See ECIA).
78. ECAMA - Electronic Components Assemblies & Materials Association; (See ECIA).
79. ECIA – Electronic Components Industry Association; www.eciaonline.org.
80. EIA - Electronic Industries Alliance; (See TIA).
81. EIMA - EIFS Industry Members Association; www.eima.com.
82. EJMA - Expansion Joint Manufacturers Association, Inc.; www.ejma.org.
83. ESD - ESD Association; (Electrostatic Discharge Association); www.esda.org.
84. ESTA - Entertainment Services and Technology Association; (See PLASA).
85. ETL - Intertek (See Intertek); www.intertek.com.
86. EVO - Efficiency Valuation Organization; www.evo-world.org.

87. FIBA - Federation Internationale de Basketball; (The International Basketball Federation); www.fiba.com.
88. FIVB - Federation Internationale de Volleyball; (The International Volleyball Federation); www.fivb.org.
89. FM Approvals - FM Approvals LLC; www.fmglobal.com.
90. FM Global - FM Global; (Formerly: FMG - FM Global); www.fmglobal.com.
91. FRSA - Florida Roofing, Sheet Metal & Air Conditioning Contractors Association, Inc.; www.floridaroof.com.
92. FSA - Fluid Sealing Association; www.fluidsealing.com.
93. FSC - Forest Stewardship Council U.S.; www.fscus.org.
94. FSEC - Florida Solar Energy Center; www.fsec.ucf.edu.
95. GA - Gypsum Association; www.gypsum.org.
96. GANA - Glass Association of North America; www.glasswebsite.com.
97. GS - Green Seal; www.greenseal.org.
98. HI - Hydraulic Institute; www.pumps.org.
99. HI/GAMA - Hydronics Institute/Gas Appliance Manufacturers Association; (See AHRI).
100. HMMA - Hollow Metal Manufacturers Association; (See NAAMM).
101. HPVA - Hardwood Plywood & Veneer Association; www.hpva.org.
102. HPW - H. P. White Laboratory, Inc.; www.hpwhite.com.
103. IAPSC - International Association of Professional Security Consultants; www.iapsc.org.
104. IAS – International Accreditation Service; www.iasonline.org.
105. IAS - International Approval Services; (See CSA).
106. ICBO - International Conference of Building Officials; (See ICC).
107. ICC - International Code Council; www.iccsafe.org.
108. ICEA - Insulated Cable Engineers Association, Inc.; www.icea.net.
109. ICPA - International Cast Polymer Alliance; www.icpa-hq.org.
110. ICRI - International Concrete Repair Institute, Inc.; www.icri.org.
111. IEC - International Electrotechnical Commission; www.iec.ch.
112. IEEE - Institute of Electrical and Electronics Engineers, Inc. (The); www.ieee.org.
113. IES - Illuminating Engineering Society; (Formerly: Illuminating Engineering Society of North America); www.ies.org.
114. IESNA - Illuminating Engineering Society of North America; (See IES).
115. IEST - Institute of Environmental Sciences and Technology; www.iest.org.
116. IGCC - Insulating Glass Certification Council; www.igcc.org.
117. IGMA - Insulating Glass Manufacturers Alliance; www.igmaonline.org.
118. IGSHPA - International Ground Source Heat Pump Association; www.igshpa.okstate.edu.
119. ILI - Indiana Limestone Institute of America, Inc.; www.iliai.com.
120. Intertek - Intertek Group; (Formerly: ETL SEMCO; Intertek Testing Service NA); www.intertek.com.
121. ISA - International Society of Automation (The); (Formerly: Instrumentation, Systems, and Automation Society); www.isa.org.
122. ISAS - Instrumentation, Systems, and Automation Society (The); (See ISA).
123. ISFA - International Surface Fabricators Association; (Formerly: International Solid Surface Fabricators Association); www.isfanow.org.
124. ISO - International Organization for Standardization; www.iso.org.
125. ISSFA - International Solid Surface Fabricators Association; (See ISFA).
126. ITU - International Telecommunication Union; www.itu.int/home.
127. KCMA - Kitchen Cabinet Manufacturers Association; www.kcma.org.
128. LMA - Laminating Materials Association; (See CPA).
129. LPI - Lightning Protection Institute; www.lightning.org.

130. MBMA - Metal Building Manufacturers Association; www.mbma.com.
131. MCA - Metal Construction Association; www.metalconstruction.org.
132. MFMA - Maple Flooring Manufacturers Association, Inc.; www.maplefloor.org.
133. MFMA - Metal Framing Manufacturers Association, Inc.; www.metalframingmfg.org.
134. MHIA - Material Handling Industry of America; www.mhia.org.
135. MIA - Marble Institute of America; www.marble-institute.com.
136. MMPA - Moulding & Millwork Producers Association; (Formerly: Wood Moulding & Millwork Producers Association); www.wmmpa.com.
137. MPI - Master Painters Institute; www.paintinfo.com.
138. MSS - Manufacturers Standardization Society of The Valve and Fittings Industry Inc.; www.mss-hq.org.
139. NAAMM - National Association of Architectural Metal Manufacturers; www.naamm.org.
140. NACE - NACE International; (National Association of Corrosion Engineers International); www.nace.org.
141. NADCA - National Air Duct Cleaners Association; www.nadca.com.
142. NAIMA - North American Insulation Manufacturers Association; www.naima.org.
143. NALP – National Association of Landscape Professionals (Formerly Professional Landcare Network); www.landscapeprofessionals.org.
144. NBGQA - National Building Granite Quarries Association, Inc.; www.nbgqa.com.
145. NBI – New Buildings Institute; www.newbuildings.org.
146. NCAA - National Collegiate Athletic Association (The); www.ncaa.org.
147. NCMA - National Concrete Masonry Association; www.ncma.org.
148. NEBB - National Environmental Balancing Bureau; www.nebb.org.
149. NECA - National Electrical Contractors Association; www.necanet.org.
150. NeLMA - Northeastern Lumber Manufacturers Association; www.nelma.org.
151. NEMA - National Electrical Manufacturers Association; www.nema.org.
152. NETA - InterNational Electrical Testing Association; www.netaworld.org.
153. NFHS - National Federation of State High School Associations; www.nfhs.org.
154. NFPA - National Fire Protection Association; www.nfpa.org.
155. NFPA - NFPA International; (See NFPA).
156. NFRC - National Fenestration Rating Council; www.nfrc.org.
157. NHLA - National Hardwood Lumber Association; www.nhla.com.
158. NICET - National Institute for Certification in Engineering Technologies; www.nicet.org.
159. NLGA - National Lumber Grades Authority; www.nlga.org.
160. NOFMA - National Oak Flooring Manufacturers Association; (See NWFA).
161. NOMMA - National Ornamental & Miscellaneous Metals Association; www.nomma.org.
162. NRCA - National Roofing Contractors Association; www.nrca.net.
163. NRMCA - National Ready Mixed Concrete Association; www.nrmca.org.
164. NSF - NSF International; www.nsf.org.
165. NSPE - National Society of Professional Engineers; www.nspe.org.
166. NSSGA - National Stone, Sand & Gravel Association; www.nssga.org.
167. NTMA - National Terrazzo & Mosaic Association, Inc. (The); www.ntma.com.
168. NWFA - National Wood Flooring Association; www.nwfa.org.
169. PCI - Precast/Prestressed Concrete Institute; www.pci.org.
170. PDI - Plumbing & Drainage Institute; www.pdionline.org.
171. PLANET - Professional Landcare Network; (See NALP).
172. PLASA - PLASA; (Formerly: ESTA - Entertainment Services and Technology Association); www.plasa.org.
173. PTI - Post-Tensioning Institute; www.post-tensioning.org.
174. RCSC - Research Council on Structural Connections; www.boltcouncil.org.

175. RFCI - Resilient Floor Covering Institute; www.rfci.com.
176. RIS - Redwood Inspection Service; www.redwoodinspection.com.
177. SAE - SAE International; www.sae.org.
178. SCTE - Society of Cable Telecommunications Engineers; www.scte.org.
179. SDI - Steel Deck Institute; www.sdi.org.
180. SDI - Steel Door Institute; www.steeldoor.org.
181. SEFA - Scientific Equipment and Furniture Association; www.sefalabs.com.
182. SEI/ASCE - Structural Engineering Institute/American Society of Civil Engineers; (See ASCE).
183. SGCC - Safety Glazing Certification Council; www.sgcc.org.
184. SIA - Security Industry Association; www.siaonline.org.
185. SJI - Steel Joist Institute; www.steeljoist.org.
186. SMA - Screen Manufacturers Association; www.smainfo.org.
187. SMACNA - Sheet Metal and Air Conditioning Contractors' National Association; www.smacna.org.
188. SMPTE - Society of Motion Picture and Television Engineers; www.smpte.org.
189. SPFA - Spray Polyurethane Foam Alliance; www.sprayfoam.org.
190. SPIB - Southern Pine Inspection Bureau; www.spib.org.
191. SPRI - Single Ply Roofing Industry; www.spri.org.
192. SRCC - Solar Rating and Certification Corporation; www.solar-rating.org.
193. SSINA - Specialty Steel Industry of North America; www.ssina.com.
194. SSPC - SSPC: The Society for Protective Coatings; www.sspc.org.
195. STI - Steel Tank Institute; www.steeltank.com.
196. SWI - Steel Window Institute; www.steelwindows.com.
197. SWPA - Submersible Wastewater Pump Association; www.swpa.org.
198. TABB - Testing, Adjusting and Balancing Bureau; www.tabbcertified.org.
199. TCA - Tilt-Up Concrete Association; www.tilt-up.org.
200. TCNA - Tile Council of North America, Inc.; www.tileusa.com.
201. TEMA - Tubular Exchanger Manufacturers Association, Inc.; www.tema.org.
202. TIA - Telecommunications Industry Association; (Formerly: TIA/EIA - Telecommunications Industry Association/Electronic Industries Alliance); www.tiaonline.org.
203. TIA/EIA - Telecommunications Industry Association/Electronic Industries Alliance; (See TIA).
204. TMS - The Masonry Society; www.masonrysociety.org.
205. TPI - Truss Plate Institute; www.tpinst.org.
206. TPI - Turfgrass Producers International; www.turfgrasssod.org.
207. TRI - Tile Roofing Institute; www.tileroofing.org.
208. UFAC - Upholstered Furniture Action Council; www.ufac.org.
209. UL - Underwriters Laboratories Inc.; www.ul.com.
210. ULC - Underwriters Laboratories of Canada; www.ulc.ca.
211. UNI - Uni-Bell PVC Pipe Association; www.uni-bell.org.
212. USAV - USA Volleyball; www.usavolleyball.org.
213. USBA - United States Badminton Association; www.usabadminton.org.
214. USGBC - U.S. Green Building Council; www.usgbc.org.
215. USITT - United States Institute for Theatre Technology, Inc.; www.usitt.org.
216. WA – Wallcoverings Association; www.wallcoverings.org.
217. WASTEC - Waste Equipment Technology Association; www.wastec.org.
218. WCLIB - West Coast Lumber Inspection Bureau; www.wclib.org.
219. WCMA - Window Covering Manufacturers Association; www.wcmanet.org.
220. WDMA - Window & Door Manufacturers Association; www.wdma.com.

221. WI - Woodwork Institute; (Formerly: WIC - Woodwork Institute of California); www.wicnet.org.
222. WMMPA - Wood Moulding & Millwork Producers Association; (See MMPA).
223. WSRCA - Western States Roofing Contractors Association; www.wsrca.com.
224. WWPA - Western Wood Products Association; www.wwpa.org.

B. Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. This information is believed to be accurate as of the date of the Contract Documents.

1. IAPMO - International Association of Plumbing and Mechanical Officials; www.iapmo.org.
2. ICC - International Code Council; www.iccsafe.org.
3. ICC-ES - ICC Evaluation Service, LLC; www.icc-es.org.

C. Federal Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Information is subject to change and is believed to be accurate as of the date of the Contract Documents.

1. COE - Army Corps of Engineers; www.usace.army.mil.
2. CPSC - Consumer Product Safety Commission; www.cpsc.gov.
3. DOC - Department of Commerce; National Institute of Standards and Technology; www.nist.gov.
4. DOD - Department of Defense; http://quicksearch.dla.mil.
5. DOE - Department of Energy; www.energy.gov.
6. EPA - Environmental Protection Agency; www.epa.gov.
7. FAA - Federal Aviation Administration; www.faa.gov.
8. FCC - Federal Communications Commission; www.fcc.gov.
9. FG - Federal Government Publications; www.gpo.gov.
10. GSA - General Services Administration; www.gsa.gov.
11. HUD - Department of Housing and Urban Development; www.hud.gov.
12. LBL - Lawrence Berkeley National Laboratory; Environmental Energy Technologies Division; http://eetd.lbl.gov.
13. NIST - National Institute of Standards and Technology; www.nist.gov.
14. OSHA - Occupational Safety & Health Administration; www.osha.gov.
15. SD - Department of State; www.state.gov.
16. TRB - Transportation Research Board; National Cooperative Highway Research Program; www.trb.org.
17. USDA - Department of Agriculture; Agriculture Research Service; U.S. Salinity Laboratory; www.ars.usda.gov.
18. USDA - Department of Agriculture; Rural Utilities Service; www.usda.gov.
19. USDJ - Department of Justice; Office of Justice Programs; National Institute of Justice; www.ojp.usdoj.gov.
20. USP - U.S. Pharmacopeia; www.usp.org.
21. USPS - United States Postal Service; www.usps.com.

D. Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the standards and regulations in the following list. This information is subject to change and is believed to be accurate as of the date of the Contract Documents.

1. ADAAG - Accessibility Guidelines for Buildings and Facilities, Available from United States Access Board; www.access-board.gov.

2. AHERA - Asbestos Hazard Emergency Response Act, Available from US Environmental Protection Agency; www.epa.gov.

3. BCNYS - Building Code of New York State, Available from New York State Department of State; www.dos.ny.gov/DCEA/.

4. CFR - Code of Federal Regulations; Available from Government Printing Office; www.gpo.gov/fdsys.

5. DOD - Department of Defense; Military Specifications and Standards; Available from Department of Defense Single Stock Point; http://quicksearch.dla.mil.

6. DSCC - Defense Supply Center Columbus; (See FS).

7. FED-STD - Federal Standard; (See FS).

8. FS - Federal Specification; Available from DLA Document Services; www.quicksearch.dla.mil.

    a. Available from Defense Standardization Program; www.dsp.dla.mil.
    b. Available from General Services Administration; www.gsa.gov.
    c. Available from National Institute of Building Sciences/Whole Building Design Guide; www.wbdg.org/ccb.

9. IBC - International Building Code, Available from International Code Council; www.iccsafe.org.
10. LEED - Leadership in Energy and Environmental Design (Green Building Rating Systems), Available from U.S. Green Building Council; www.usgbc.org.

11. MILSPEC - Military Specification and Standards; (See DOD).

12. NEC - National Electrical Code, Available from NFPA (National Fire Protection Association); www.nfpa.org.

13. NSPC - National Standard Plumbing Code, Available from Plumbing-Heating-Cooling Contractors Association; www.phccweb.org.

14. NYSED/MPS - New York State Education Department Manual of Planning Standards, Available from New York State Education Department (Facilities Planning); www.p12.nysed.gov/facplan/forms.html.

15. USAB - United States Access Board; www.access-board.gov.

16. UFAS - Uniform Federal Accessibility Standards Available from Access Board; www.access-board.gov.

17. USATBCB - U.S. Architectural & Transportation Barriers Compliance Board; (See USAB).

E. State Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. This information is subject to change and is believed to be accurate as of the date of the Contract Documents.

1. CBHF - State of California; Department of Consumer Affairs; Bureau of Electronic Appliance and Repair, Home Furnishings and Thermal Insulation; www.bearhfti.ca.gov.
2. NYSDEC - New York State Department of Environmental Conservation; www.dec.ny.gov.
3. NYSDOH - New York State Department of Health; www.health.ny.gov.
4. NYSDOT - New York State Department of Transportation; www.dot.ny.gov.
5. NYSED - New York State Education Department (Facilities Planning); www.p12.nysed.gov/facplan/.
6. NYSERDA - New York State Energy Research and Development Authority; www.nyserda.ny.gov.
7. OSHPD - Office of Statewide Health Planning and Development (State of California); www.oshpd.ca.gov.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 42 00

SECTION 01 50 00 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

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

B. Related Requirements:

1. Division 01 Section 01 12 00 “Multiple Contract Project Summary-Project Schedule" for responsibilities for temporary facilities and controls for the project.

C. Temporary utilities include, but are not limited to, the following:

1. Water service and distribution
2. Electric power and lighting
3. Heat
4. Ventilation
5. Sanitary facilities
6. Storm and sanitary sewer
7. Internet service

D. Support facilities include, but are not limited to, the following:

1. Field offices and storage
2. Construction Manager’s field office
3. Dewatering
4. Temporary enclosures
5. Hoists and temporary elevator use
6. Project signs and required notifications
7. Wayfinding signs
8. Waste collection and disposal
9. Pest control

E. Security and protection facilities include, but are not limited to, the following:

1. Fire protection
2. Barricades, warning signs and lights
3. Environmental protection
4. Tree and plant protection
5. Temporary fencing

6. Temporary enclosures
7. Temporary partitions

1.3 USE CHARGES

A. General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities engaged in the Project to use temporary services and facilities without cost, including, but not limited to, Owner, Architect, Construction Manager, testing agencies, and authorities having jurisdiction.

B. Water Service: Use water from the Owner's existing water system if available. If not available, contractor must supply water required for the performance of their work.

C. Electric Power: Temporary electric power, including set up and maintenance is the responsibility of the Electrical Contractor.

1. Use of electric power from the Owner's permanent power system (when operational) is available to all contractors without cost.
2. Electrical Contractor is to provide power to the Construction Manager's job trailer.

1.4 SUBMITTALS, GENERAL

A. General: Submit all informational submittals required by this Section concurrently.

1.5 INFORMATIONAL SUBMITTALS

A. Site Utilization Plan: Show temporary facilities, temporary utility lines and connections, staging areas, crane staging areas, vehicle circulation, and phased parking areas for construction personnel.

B. Implementation and termination schedule: each prime contractor shall submit a schedule indicating their proposed implementation and termination schedule for each temporary utility they are responsible for. This schedule shall be submitted along with the prime contractor's construction schedule.

C. Shoring and Bracing Plan: Submit shoring and bracing plan, designed, signed and sealed by the qualified professional engineer responsible for its preparation.

D. Temporary Signage: Provide shop drawings indicating the size, type and proposed location of signs for Construction Manager's review. Temporary and permanent site signage is by the Site Work Contractor.

1.6 QUALITY ASSURANCE

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

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

C. Accessible Temporary Egress: Comply with applicable provisions in the United States Access Board's ADA-ABA Accessibility Guidelines and ICC/ANSI A117.1.

D. Regulations: The prime contractors shall comply with industry standards and applicable laws and regulations of authorities having jurisdiction.

E. Standards: The prime contractors shall comply with NFPA 241 “Standard for Safeguarding Construction, Alterations and Demolition Operations”, ANSI-A10 Series standards for “Safety Requirements for Construction and Demolition”, and NECA Electrical Design Library “Temporary Electrical Facilities”.

1. Electrical Service: Comply with NEMA, NECA and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70

PART 2 - PRODUCTS

2.1 MATERIALS

A. Chain-Link Fencing: Minimum 2-inch, 11 gauge, galvanized-steel, chain-link fabric fencing; minimum 6 feet high with galvanized-steel pipe posts embedded minimum of 24” in the ground; minimum 1-1/2-inch-ID line posts and 2-1/2-inch-ID corner and pull posts.

B. Fencing Windscreen Privacy Screen: Polyester fabric scrim with grommets for attachment to chain link fence, sized to height of fence, in color selected by Architect from manufacturer's standard colors.

C. Plastic Barrier Fencing: High-density polyethylene mesh, high-visibility orange; minimum 4 feet high with minimum 6-foot-long wood stakes spaced a maximum of 8 feet on center, and with a continuous wood top stake; steel wire or nylon cable ties every 12 inches on center; with warning signs as indicated or required.

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

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

2.2 TEMPORARY FACILITIES

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

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

1. Store combustible materials apart from building.

2.3 EQUIPMENT

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

B. HVAC Equipment: Provide temporary heating units that have been tested and labeled by UL, FM or other recognized trade association related to the type of fuel be consumed. Use of permanent HVAC system is not permitted.

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

2. HVAC Units: Listed and labeled for type of fuel being consumed, by a qualified testing agency acceptable to authorities having jurisdiction and marked for intended location and application.

a. Directly vent all combustion gases to the exterior.

b. Design system to use 100 percent outside make-up air.

c. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1) Temp-Air, Inc.

C. Air-Filtration Units: Primary and secondary HEPA-filter-equipped portable units with four-stage filtration. Provide single switch for emergency shutoff. Configure to run continuously.

D. Temporary Toilet Units: Provide self-contained

PART 3 - EXECUTION

3.1 TEMPORARY FACILITIES, GENERAL

A. Conservation: Coordinate construction and use of temporary facilities with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.

3.2 INSTALLATION, GENERAL

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

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

3.3 TEMPORARY UTILITY INSTALLATION

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

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

B. Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.

1. Connect temporary sewers to municipal system as directed by authorities having jurisdiction.

C. Water Service: Install water service and distribution piping in sizes and pressures adequate for construction.

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

2. Provide reduced pressure zone (RPZ) backflow preventer at connection to existing system. Provide appropriate drainage piping with air gap from the backflow preventer relief port to an approved discharge point.

a. Basis-of-Design Product: Watts Water Technologies; Series LF909.

3. Provide 3/4-inch hose connections (at each level for multi-storied buildings) spaced so that a 200-foot-long hose will reach all areas of building where a Contractor requires water.

4. Provide sign at each outlet indicating temporary water sources are not for human consumption

D. Sanitary Facilities: Provide temporary toilets, wash facilities, and bottled drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities. Use of Owner’s toilet facilities and drinking water facilities is not permitted.

1. Provide continual supply of toilet paper, paper towels, soap, and bottled drinking water.

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

1. Provide temporary dehumidification systems when required to reduce ambient and substrate moisture levels to level required to allow installation or application of finishes and their proper curing or drying.

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

1. Prior to commencing work, isolate the HVAC system in area where work is to be performed.

a. Disconnect supply and return ductwork in work area from HVAC systems servicing occupied areas.

b. Maintain negative air pressure within work area using HEPA-equipped air-filtration units, starting with commencement of temporary partition construction, and continuing until removal of temporary partitions is complete.

2. Maintain dust partitions during the Work. Use vacuum collection attachments on dust-producing equipment. Isolate limited work within occupied areas using portable dust-containment devices.

3. Perform daily construction cleanup and final cleanup using approved, HEPA-filter-equipped vacuum equipment.

G. Electric Power Service: Electrical Contractor to provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.

1. Install electric power service overhead unless otherwise indicated.

2. Connect temporary service to Owner's existing power source, as directed by Owner. Maintain equipment in a condition acceptable to Owner.

3. Service Requirements:

a. Provide 120/208 V, 60 Hz, single/three phase alternating current with capacity to accommodate maximum electric power and lighting requirements during construction.

b. Provide minimum of two each 120/208 V duplex outlets spaced so that a 50-foot-long extension cord will reach all areas of building where a Contractor requires electric power.

4. Distribution System: Provide poles, pole hardware, overhead, exterior and interior wiring, transformers, and similar items required for electric power service and lighting.

a. Single-Phase Wiring: 3-wire, 120/208 V feeders, with No. 12 three- or four-wire branch circuits conforming to NEC No. 210-7 and OSHA requirements, with branch circuit protective device.

1) Provide each branch circuit with 120/208 V, single-phase fused grounding-type power outlets, buss type SRX or SKY, with approved covered box and fuses as required.

2) Provide panelboards containing ground fault interrupter type circuit breakers meeting applicable NEC requirements with required number of poles.

a) Basis-of-Design Product: Square D by Schneider Electric; QO120GFI for each branch circuit allowing maximum total load of 16 amps on each 20-amp branch circuit.

3) Provide appropriately sized green grounding wiring complying with NEC requirements in feeder and branch circuits to provide grounding of all 120 and 208 V outlets in approved manner.

b. Three-Phase Wiring: Three-wire, 208 V feeders, with fused disconnect switches, allowing minimum 5 hp motor load at 208 V from each feeder, and providing four three-phase outlets on each floor near points of use.

5. Extension Cords: Each contractor shall provide their own temporary 3-wire plug-in extensions with grounding features at both ends and other special equipment. Welding equipment shall be run from generators.

6. Temporary power shall be energized between 6:50am and 3:40pm daily.

H. Lighting: Electrical Contractor to provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.

1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.

2. Maintain OSHA standards for power and foot candle levels in all work areas requiring temporary lighting.

3. Temporary lighting shall be energized daily between 6:50am and 3:50pm until permanent fixtures are installed and operational. Temporary lighting system shall not be controlled by any single contractor.

I. Internet Service: Provide temporary internet service in Construction Manager's field office.

J. Provide Contractor's superintendent with cellular telephone for use during business hours.

3.4 SUPPORT FACILITIES INSTALLATION

A. General: Comply with the following:

1. Provide construction for temporary offices, shops, and sheds located within construction area or within 30 feet of building lines that is noncombustible according to ASTM E 136. Comply with NFPA 241.
2. Maintain support facilities until Substantial Completion.

B. Temporary Roads and Paved Areas: Site Work Contractor to construct and maintain temporary roads and paved areas adequate for construction operations. Locate temporary roads and paved areas as indicated on Drawings.

1. Provide dust-control treatment that is nonpolluting and nontracking. Reapply treatment as required to minimize dust.

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

1. Coordinate elevations of temporary roads and paved areas with permanent roads and paved areas.

2. Prepare subgrade and install subbase and base for temporary roads and paved areas according to Division 31 Section "Earth Moving."

3. Recondition base after temporary use, including removing contaminated material, regrading, proof rolling, compacting, and testing.

4. Delay installation of final course of permanent hot-mix asphalt pavement until immediately before Substantial Completion. Repair hot-mix asphalt base-course pavement before installation of final course according to Division 32 Section "Asphalt Paving."

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

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

E. Parking: Site Work Contractor to provide temporary parking areas for all construction personnel.

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

1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties or endanger permanent Work or temporary facilities.
2. Remove snow and ice as required to minimize accumulations in all areas of construction operation.

G. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with progress cleaning requirements in Division 01 Section "Execution."

1. Waste from Construction Operations: Includes materials not intended or necessary for completion of Work, including packing materials, food waste, wastepaper, and similar items. Excavated material is not included in this definition.

2. Chutes: Provide enclosed chutes for removal of waste from construction operations from levels above grade level or roof. Remove waste in a controlled manner; materials shall not be dropped or thrown from heights.

3. Each prime contractor shall remove their own debris from the work area to a waste disposal container on a daily basis.

4. Maintenance of a clean, safe work site shall be the responsibility of each prime contractor.

5. Dumpsters are to be provided by all prime contractors for the performance of their work.

6. All waste to be disposed of legally.

H. Recycling Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical.

1. Provide appropriately marked containers or bins for controlling recyclable waste until they are removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.

a. Inspect containers and bins for contamination and remove contaminated materials if found.

2. Packaging:

a. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.
b. Polystyrene Packaging: Separate and bag materials.
c. Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site.

3. Remove recyclable waste off Owner's property and transport to recycling receiver or processor.

I. Shoring and Bracing: Provide and maintain shoring, bracing, and structural supports, designed by a qualified professional engineer, required to preserve stability and prevent movement, settlement, or collapse of new and existing construction and to prevent unexpected or uncontrolled movement or collapse of construction.

J. Staging and Scaffolding: Provide facilities necessary for supporting materials and personnel in accordance with requirements of authorities having jurisdiction

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

L. Temporary Elevator Use: Use of elevators is not permitted.

M. Temporary Stairs: Until permanent stairs are available, provide temporary stairs where ladders are not adequate.

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

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

O. Temporary Use of Permanent Stairs: Use of new stairs for construction traffic will be permitted, provided stairs are protected and finishes restored to new condition at time of Substantial Completion.

3.5 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.

1. Where access to adjacent properties is required in order to affect protection of existing facilities, obtain written permission from adjacent property owner to access property for that purpose.

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

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

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

1. Maintain protection zones free of weeds and trash.

2. Do not prune roots or branches of trees to remain without approval of Architect.

a. If pruning is approved, engage an experienced, qualified arborist to perform pruning and treating.

3. Repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations, in a manner approved by Architect.

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

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

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

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

H. Fall Protection:

1. The Roofing Contractor shall provide temporary cable top and mid railings per OSHA regulations.
2. All prime contractors shall provide OSHA approved fall protection for their workers as required.

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

1. Where temporary egress doors occur, provide minimum clear opening width of 36 inches.

J. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior. Face exterior enclosures with plywood, unless otherwise approved, in advance, by Architect. Polyethylene sheet may not be used for exterior enclosures.

1. Where heating or cooling is needed and permanent enclosure is incomplete, insulate temporary enclosures.

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

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

L. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241; manage fire-prevention program.

1. Prohibit smoking.

2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.

3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.

3.6 MOISTURE AND MOLD CONTROL

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

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

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

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

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

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

3.7 OPERATION, TERMINATION, AND REMOVAL

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

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

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

a. Heating: Provide heating between September 15 and May 31.

1) Maintain minimum interior temperature of 60 deg F.

2) Maintain relative humidity levels between 50 and 55 percent.

2. Where temperature and humidity levels required for the proper installation and application of a product or system differ from those listed above, provide supplemental temporary services to maintain the required temperature and humidity levels.

3. Use temporary duct systems, industrial fans, or other equipment to circulate tempered air to all areas of work.

4. Maintain operation of temporary lighting in corridors, stairwells and similar locations on a 24-hour basis.

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

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

1. Materials and facilities that constitute temporary facilities are property of Contractor.

2. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Division 01 Section "Closeout Procedures."

END OF SECTION 01 50 00

SECTION 01 60 00 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

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

1.3 DEFINITIONS

A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.

2. Comparable Product: Product that is demonstrated and approved through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

B. Basis-of-Design Product Specification: A specification in which a specific manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products.

1.4 ACTION SUBMITTALS

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

1. Include data to indicate compliance with the requirements specified in "Comparable Products" Article.

2. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Architect will notify Contractor through Construction Manager of approval or rejection of proposed comparable product request.

   a. Form of Approval: As specified in Division 01 Section "Submittal Procedures."

B. Basis-of-Design Product Specification Submittal: Comply with requirements in Division 01 Section "Submittal Procedures." Show compliance with requirements.

1.5 QUALITY ASSURANCE

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

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

B. The use of asbestos containing building materials is prohibited.

1. Contractor is responsible for providing closeout documentation certifying no asbestos containing building materials have been used in the Work.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

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

B. Delivery and Handling:

1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.

2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.

3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.

4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.

C. Storage:

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

1.7 PRODUCT WARRANTIES

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

1. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.

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

1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
2. Warranty periods related to Boilers and Accessory Equipment, and Air Conditioning Equipment do not begin until one year after the date of substantial completion.
3. See individual Specification Sections for specific content requirements and particular requirements for submitting special warranties.

C. Submittal Time: Comply with requirements in Division 01 Section "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

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

1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.

2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.

3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.

4. Where products are accompanied by the term "as selected," Architect will make selection.

5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.

6. Or Equal: For products specified by name and accompanied by the term "or equal," or "or approved equal," or "or approved," comply with requirements in "Comparable Products" Article to obtain approval for use of an unnamed product.

B. Product Selection Procedures:

1. Products:

a. Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product.

2. Manufacturers:

a. Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed, or a product by an unnamed manufacturer, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed manufacturer's product.

3. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers, or a product by an unnamed manufacturer that complies with requirements. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product.

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

1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Division 01 Section "Substitution Procedures" for proposal of product.

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

2.2 COMPARABLE PRODUCTS

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

1. Evidence that the proposed product does not require revisions to the Contract Documents,that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.

2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.

3. Evidence that proposed product provides specified warranty.

4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.

5. Samples, if requested.

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 60 00

SECTION 01 73 00 - EXECUTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:

1. Examination of conditions.
2. Preparation for construction.
3. Construction layout.
4. Field engineering and surveying.
5. Installation of the Work.
6. Cutting and patching.
7. Progress cleaning.
8. Starting and adjusting.
9. Protection of installed construction.
10. Correction of the Work.

1.3 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 construction to original conditions after installation of other work.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For land surveyor and professional engineer.
B. Structural Layout Plan: Survey of Structural Grid in relation to existing building(s).

1.5 CLOSEOUT SUBMITTALS

A. Certificates: Submit certificate signed by land surveyor or professional engineer as applicable certifying that location and elevation of improvements comply with requirements.
B. Certified Surveys: Submit two copies signed by land surveyor.

1.6 QUALITY ASSURANCE

A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.

B. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated.

C. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.

1. Structural Elements: When cutting and patching structural elements, shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection

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

3. Other Construction Elements: Do not cut and patch other construction elements or 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.

4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction 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.

D. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

PART 2 - PRODUCTS

2.1 MATERIALS

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

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

1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work.

1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services, and other utilities.

2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

C. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Existing Utility Information: Furnish information to local utility that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.

B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for information to Architect according to requirements in Division 01 Section "Project Management and Coordination."

3.3 CONSTRUCTION LAYOUT

A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect and Construction Manager promptly.

B. General: Engage a land surveyor to lay out the Work using accepted surveying practices.

1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
2. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
3. Inform installers of lines and levels to which they must comply.
4. Check the location, level and plumb, of every major element as the Work progresses.
5. Notify Architect and Construction Manager when deviations from required lines and levels exceed allowable tolerances.

C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.

D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.

1. Structural Layout Plan: Perform Survey of Structural Grid as provided in Contract Documents, including any specific Layout Notes and/or Plan. Provide Structural Layout Plan for review by Engineer prior to performing any additional work.

E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect and Construction Manager.

3.4 FIELD ENGINEERING

A. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.

1. Do not change or relocate existing benchmarks or control points without prior written approval of Architect or Construction Manager. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Architect and Construction Manager before proceeding.

2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.

B. Benchmarks: Establish and maintain a minimum of two permanent benchmarks on Project site, referenced to data established by survey control points.

1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.

C. Certified Survey: On completion of foundation walls, major site improvements, and other work requiring field-engineering services, prepare a certified survey showing dimensions, locations, angles, and elevations of construction and sitework.

3.5 INSTALLATION

A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.

1. Make vertical work plumb and make horizontal work level.
2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
4. Maintain minimum headroom clearance of 96 inches in occupied spaces and 90 inches in unoccupied spaces, unless otherwise indicated.

B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.

D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

E. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.

F. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

G. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.

1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.

2. Allow for building movement, including thermal expansion and contraction.

3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

H. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.

I. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.6 CUTTING AND PATCHING

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

C. Temporary Support: Provide temporary support of work to be cut.

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

E. Adjacent Occupied Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

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

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

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

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

3. Concrete 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 Sections where required by cutting and patching operations.

5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.

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

H. 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 practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.

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

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

    a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.

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

4. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.

I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.7 PROGRESS CLEANING

A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.

1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.

2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F.

3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.

    a. Use containers intended for holding waste materials of type to be stored.

4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.

B. Site: Maintain Project site free of waste materials and debris.

C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.

1. Remove liquid spills promptly.
2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Division 01 Section "Temporary Facilities and Controls."

H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

J. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.8 STARTING AND ADJUSTING

A. Coordinate startup and adjusting of equipment and operating components with requirements in Division 01 Section "General Commissioning Requirements."
B. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
C. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.
D. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

3.9 PROTECTION OF INSTALLED CONSTRUCTION

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
B. Comply with manufacturer's written instructions for temperature and relative humidity.

3.10 CORRECTION OF THE WORK

A. Repair or remove and replace damaged, defective, or nonconforming Work. Restore damaged substrates and finishes.

    1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.

B. Architect may issue "Construction Deficiency Report" for items identified by Architect as needing correction. Promptly repair or remove and replace defective construction identified in Construction Deficiency Report. Provide written notification to Architect when identified item has been corrected.

C. Restore permanent facilities used during construction to their specified condition.

D. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.

E. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.

F. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION 01 73 00

SECTION 01 77 00 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:

1. Substantial Completion procedures.
2. Final completion procedures.
3. Warranties.
4. Final cleaning.
5. Repair of the Work.

B. All Submittals identified in Section 01 77 00 are classified as “Informational Submittals” in accordance with Specification Section 01 33 00.

1.3 SUBSTANTIAL COMPLETION PROCEDURES

A. Submittals Prior to Substantial Completion: Complete the following before Contract-scheduled date of Substantial Completion:

1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, electrical inspection reports, preliminary balance reports, and similar releases.

2. Submit notarized letter on Contractor’s letterhead certifying no asbestos containing building materials have been used in the Work. Also include a copy in the Operation and Maintenance Manuals.

3. Submit testing, adjusting, and balancing records. Also include a copy in the Operation and Maintenance Manuals.

4. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.

B. **Procedures Prior to Substantial Completion:** Complete the following before Contract-scheduled date of Substantial Completion:

1. Advise Owner of pending insurance changeover requirements.

2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.

3. Complete startup and testing of systems and equipment.

4. Perform preventive maintenance on equipment used prior to Substantial Completion. Maintenance to be performed by a factory authorized service representative so as not to void the equipment warranty.

5. Advise Owner of changeover in heat and other utilities.

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

7. Complete all items on any Field Observation and Construction Deficiency Reports and submit a copy of the reports to the Architect and Construction Manager identifying how each item was addressed in detail, including the date of completion.

8. Complete final cleaning requirements as specified below, including touchup painting.

9. Repair and restore marred exposed finishes to eliminate visual defects.

10. Complete all items noted as requiring completion/correction from the Commissioning consultant and TAB (Testing and Balancing) consultant.

C. Inspection: No later than 14 days prior to the Contract-scheduled date of Substantial Completion, submit a letter to the Architect and Construction Manager confirming the work is on schedule for Substantial Completion by the contract specified date. No later than seven days after Contract-scheduled date of Substantial Completion (including authorized adjustments), the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. Absent the Contractor letter confirming readiness of work, the Architect may elect to postpone the Substantial Completion inspection.

1. Additional Inspections: Request additional Substantial Completion inspections when the work that was not complete for the scheduled Substantial Completion inspection is now ready to inspect.

    a. Costs for such additional Substantial Completion inspections will be deducted from sums otherwise due the Contractor by deduct Change Order.

2. Results of completed inspection will form the basis of requirements for final completion.

1.4 FUNCTIONAL COMPLETION PROCEDURES

A. Functional Completion applies to Contract Work being Commissioned. The commissioning of Divisions 01, 22, 23, and 26 (as applicable to each Contractor) must be complete prior to Functional Completion, except for the following:

1. Deferred Work approved in writing by the Architect.
2. Control system training planned to be performed after occupancy and final acceptance

3. Any required seasonal TAB work to be formed during Warranty period.
4. Other approved deferred testing.

B. Completion of Commissioning required to demonstrate Functional Completion includes the following as applicable for all systems, but is not limited to:

1. Completed and signed pre-functional checklists and start-up documentation.
2. Requested trend logs complete, data and forms submitted and approved.
3. Completion of all functional testing.
4. Required training of Owner personnel completed and approved.
5. Submission of final approved TAB report.
6. Submission of final approved commissioning report.
7. Submission of the approved O&M manuals.
8. All identified deficiencies have been corrected or are approved in writing by the Owner to be excepted from this milestone.

C. The Architect will determine the date of Functional Completion after reviewing the Commissioning Agent's recommendation for Functional Completion.

1.5 FINAL COMPLETION PROCEDURES

A. Submittals Prior to Final Completion: Before final inspection for determining final completion, complete the following:

1. Submit copy of Architect's Substantial Completion inspection list of items to be completed or corrected. The copy of the list shall state that each item has been completed or otherwise resolved for acceptance, what corrective action was taken, and the date of completion. Items that are in dispute shall have an explanation attached.

2. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video recordings specified in Division 01 Section "Demonstration and Training."

3. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, property surveys, and similar final record information.

4. Submit closeout submittals specified in individual Specification Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.

5. Submit maintenance material submittals specified in individual Specification Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Owner. Contractor to provide a transmittal detailing all delivered maintenance materials and obtain Owner signature confirming delivery of such; a copy of transmittal with Owner's signature shall be provided with Closeout submittals. Label with manufacturer's name and model number where applicable. All keys shall be tagged and labeled.

6. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.

7. Submit a final Application for Payment according to Division 01 Section "Payment Procedures."

B. Inspection: No later than seven days after the Contract-scheduled date for final completion, Architect and Construction Manager will proceed with the final completion inspection. The Architect will review the final Certificate for Payment after the inspection or will notify the Contractor of the outstanding items that must be completed or corrected before the certificate will be processed.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete has been completed or corrected. The Owner and Architect and Construction Manager reserve the right to add items to the Substantial Completion and final completion inspection lists as long as it is part of the Contractor's work. Complete all Contract requirements prior to the final completion inspection to avoid any further re-inspection cost.

a. Costs for such reinspections and any costs for extension of the Architect's and Construction Manager's services will be deducted from sums otherwise due the Contractor.

1.6 SUBMITTAL OF PROJECT WARRANTIES

A. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual. Warranties for all equipment, materials, and systems on the Project are to start no sooner than the date of substantial completion. Provide extended warranties for all equipment, materials, and systems that may have been turned over to the Owner for its use regardless of the phased completion of the Project.

B. Warranty Electronic File: Provide warranties and bonds in PDF format. Assemble complete warranty and bond submittal package into a single electronic PDF file with bookmarks enabling navigation to each item. Provide bookmarked table of contents at beginning of document.

1. Submit two digital media copies, PDF on thumb drive.

C. Warranties in Paper Form:

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

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

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

4. Submit two paper copies, as listed above.

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

PART 2 - PRODUCTS

2.1 MATERIALS

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

PART 3 - EXECUTION

3.1 FINAL CLEANING

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

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

1. Complete the following cleaning operations before inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:

a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.

b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.

c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.

d. Remove tools, construction equipment, machinery, and surplus material from Project site.

e. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Remove surface dust and dirt from all vertical and horizontal painted surfaces. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.

f. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.

g. Sweep concrete floors broom clean in unoccupied spaces using sweeping compound that is compatible with new finishes.

h. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.

i. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Polish mirrors and glass, taking care not to scratch surfaces.

j. Remove labels that are not permanent.

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

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

m. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.

n. Clean ducts, blowers, and coils if units were operated without filters during construction or that display contamination with particulate matter on inspection.

o. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency.

p. Leave Project clean and ready for occupancy.

C. Construction Waste Disposal: Comply with waste disposal requirements in Division 01 Section "Temporary Facilities and Controls."

3.2 REPAIR OF THE WORK

A. Complete repair and restoration operations before inspection for determination of Substantial Completion.

B. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to condition acceptable to Owner.

1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.

2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that that already show evidence of repair or restoration.

    a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.

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

4. Replace burned-out bulbs, bulbs noticeably dimmed by hours of use, and defective and noisy starters in fluorescent fixtures to comply with requirements for new fixtures.

END OF SECTION 01 77 00

SECTION 01 78 23 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for preparing operation and maintenance manuals.

1.3 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Manual Format: Submit operation and maintenance manuals in the following format:

1. Two paper copies as listed below.
2. Two digital media copies, PDF format on thumb drive.

B. Prior to submission of paper copies and thumb drives as listed above, submit electronic files in PDF format for review and approval.

1.4 FORMAT OF OPERATION AND MAINTENANCE MANUALS

A. Manuals, Paper Copy: Submit manuals in the form of hard-copy, bound and labeled volumes.

1. Binders: Heavy-duty, three-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents.

    a. If two or more binders are necessary to accommodate data of a system, organize data in each binder into groupings by subsystem and related components. Cross-reference other binders if necessary to provide essential information for proper operation or maintenance of equipment or system.

    b. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents. Indicate volume number for multiple-volume sets.

2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section of the manual. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.

3. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.

    a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.

4. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

B. Manuals, Electronic Files: Submit manuals in the form of a multiple file composite electronic PDF file for each manual type required.

1. Electronic Files: Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.

2. File Names and Bookmarks: Bookmark individual documents based on file names. Name document files to correspond to system, subsystem, and equipment names used in manual directory and table of contents. Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem, and equipment names in a readily navigated file tree. Configure electronic manual to display bookmark panel on opening file.

1.5 REQUIREMENTS FOR OPERATION AND MAINTENANCE MANUALS

A. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:

1. Title Page: Include the following information:

    a. Subject matter included in manual.
    b. Name and address of Project.
    c. Date of submittal.
    d. Name and contact information for Contractor.

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

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

3. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.

1.6 OPERATION AND MAINTENANCE MANUALS

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

1. System, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents.

    a. Product name and model number. Use designations for products indicated on Contract Documents.
    b. Manufacturer's name.
    c. Equipment identification with serial number of each component.
    d. Equipment function.
    e. Complete nomenclature and number of replacement parts.

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

    a. Startup procedures.
    b. Routine and normal operating instructions.
    c. Regulation and control procedures.
    d. Normal shutdown instructions.
    e. Seasonal and weekend operating instructions.
    f. Special operating instructions and procedures.

3. Emergency Procedures: Include the following, as applicable:

    a. Instructions on stopping.
    b. Shutdown instructions for each type of emergency.
    c. Operating instructions for conditions outside normal operating limits.
    d. Special operating instructions and procedures.

4. Wiring diagrams.

5. Control diagrams.

6. Piped system diagrams.

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

7. Precautions against improper use.

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

B. Maintenance Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, manufacturers' maintenance documentation, maintenance and service schedules, spare parts list and source information, maintenance service contracts, repair materials and sources, and warranties and bonds, as described below.

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

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

    a. Product name and model number.
    b. Manufacturer's name.
    c. Color, pattern, and texture.
    d. Material and chemical composition.
    e. Reordering information for specially manufactured products.

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

    a. Inspection procedures.
    b. Types of cleaning agents to be used and methods of cleaning.
    c. List of cleaning agents and methods of cleaning detrimental to product.
    d. Schedule for routine cleaning and maintenance.
    e. Repair instructions.

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

    a. Standard maintenance instructions and bulletins.
    b. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
    c. Identification and nomenclature of parts and components.
    d. List of items recommended to be stocked as spare parts.

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

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

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

7. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.

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

9. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

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

1.7 MANUAL PREPARATION

A. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.

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

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

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

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

D. Submittals: Include copy of each product submittal approved by Architect.

    1. If the “As-Specified Verification Form” was used as the product submittal, include all pertinent product data as described in this Section.

E. Safety Data Sheets (SDS): Include copy of SDS for each product installed.

F. Comply with Division 01 Section "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 78 23

SECTION 01 78 39 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for project record documents, including the following:

1. Record Drawings.
2. Miscellaneous record submittals.

1.3 CLOSEOUT SUBMITTALS

A. Record Drawings: Contractor to submit a full set of marked-up record drawings pertaining to their contract. Provide each drawing, whether or not changes and additional information were recorded. Comply with the following:

1. Submit one full size set of the original, marked-up record prints.
2. Submit two digital media copies, in color, in PDF format on thumb drives. PDFs to be saved and submitted as one file.
3. Prior to submission of paper copies and thumb drives as listed above, submit electronic files in PDF format for review and approval.

B. Miscellaneous Record Submittals: See other Specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities.

1. Submit two paper copies of each submittal.

1.4 RECORD DRAWINGS

A. Record Prints: Architect will provide Contractor with one paper set of Contract Drawings at beginning of Work at no cost.

1. Preparation: Mark record prints to show the actual installation where installation varies from that shown originally.

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

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

   a. Dimensional changes to Drawings.
   b. Revisions to details shown on Drawings.
   c. Revisions to routing of piping and conduits.
   d. Revisions to electrical circuitry.
   e. Locations of concealed internal utilities.
   f. Changes made by Addendum.
   g. Changes made by Architect's Supplemental Instruction (ASI) forms.
   h. Changes made by Change Order or Construction Change Directive.
   i. Changes made following Architect's written orders.

3. Mark record sets with red, permanent marker.

B. Record Digital Data Files: Prepare a full set of digital data files of the Contract Drawings from the marked-up record prints.

C. Format: Identify and date each record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location. Indicate name of Contractor.

1. Record Prints: Organize record prints into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.

2. Record Digital Data Files: Organize digital data information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each digital data file.

1.5 MISCELLANEOUS RECORD SUBMITTALS

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

1.6 RECORDING AND MAINTENANCE

A. Maintenance of Record Documents: Store record documents in the field office apart from the Contract Documents used for construction. Do not use project record documents for construction purposes. Maintain record documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to project record documents for Architect's , Construction Manager's and Owner's reference during normal working hours.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 78 39

SECTION 01 79 00 - DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:

1. Demonstration of operation of systems, subsystems, and equipment.
2. Instruction in operation and maintenance of systems, subsystems, and equipment.
3. Demonstration and training video recordings.

1.3 CLOSEOUT SUBMITTALS

A. Attendance Record: For each demonstration and training session, submit list of participants, subjects covered, and length of instruction time.

B. Demonstration and Training Video Recordings: Submit two copies of each demonstration and training session.

1. Identification: On each copy, provide an applied label with the following information:

a. Name of Project.
b. Name of Architect.
c. Name of Construction Manager.
d. Name of Contractor.
e. Name of service representative providing training.
f. Name of instructor.
g. Date of video recording.

1.4 QUALITY ASSURANCE

A. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Division 01 Section "Quality Requirements," experienced in operation and maintenance procedures and training.

1.5 COORDINATION

A. Coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations and to ensure availability of Owner's personnel.

1.6 INSTRUCTION PROGRAM

A. Program Structure: Develop an instruction program that includes individual training for each system and for equipment not part of a system, as required by individual Specification Sections. Include instruction for the following as applicable to the system, equipment, or component:

1. Basis of System Design, Operational Requirements, and Criteria: Include the following:

   a. System, subsystem, and equipment descriptions.
   b. Operating standards.

2. Documentation: Review the following items in detail:

   a. Manuals.
   b. Warranties and bonds.

3. Operations: Include the following, as applicable:

   a. Startup procedures.
   b. Routine and normal operating instructions.
   c. Regulation and control procedures.
   d. Safety procedures.
   e. Normal shutdown instructions.
   f. Operating procedures for emergencies.
   g. Seasonal and weekend operating instructions.
   h. Special operating instructions and procedures.

4. Adjustments: Include the following:

   a. Noise and vibration adjustments.
   b. Economy and efficiency adjustments.

5. Troubleshooting: Include the following:

   a. Diagnostic instructions.
   b. Test and inspection procedures.

6. Maintenance: Include the following:

   a. Types of cleaning agents to be used and methods of cleaning.
   b. Procedures for routine cleaning
   c. Procedures for preventive maintenance.
   d. Procedures for routine maintenance.

7. Repairs: Include the following:

   a. Diagnosis instructions.
   b. Repair instructions.

1.7 INSTRUCTION

A. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.

B. Scheduling: Provide instruction at mutually agreed on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.

1. Schedule training with Owner**,** through Construction Manager, with at least seven days' advance notice.

1.8 DEMONSTRATION AND TRAINING VIDEO RECORDINGS

A. Digital Video Recordings: Provide high-resolution, digital video in MPEG format, produced by a digital camera with minimum sensor resolution of 12 megapixels and capable of recording in full HD mode.

1. Submit video recordings on CD-ROM or thumb drive.

B. Preproduced Video Recordings: Provide video recordings used as a component of training modules in same format as recordings of live training.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 79 00