Addendum No.: 2 **Date of Addendum: February 24, 2021**

CT DAS | Construction Services | Office of Legal Affairs, Policy, and Procurement
Ella T. Grasso Technical High School
189 Fort Hill Road
Groton, Connecticut
BI-RT-877A, OSCGR PROJECT NO: 900-0014

Original Bid Due Date / Time: **March 17, 2021** **1:00 PM**

Previous Addendums: **Addendum #1 dated 2/17/2021**

TO: **Prospective Bid Proposers**:
This Addendum forms part of the "Contract Documents" and modifies or clarifies the original "Contract Documents" for this Project dated December 01, 2020. Prospective Bid Proposers **shall** acknowledge receipt of the total number the Addenda issued for this Project on the space provided on Section 00 41 00 Bid Proposal Form.

Failure to acknowledge receipt of the total number the Addenda issued for this Project on the space provided on Section 00 41 00 Bid Proposal Form **shall** subject Bid Proposers to disqualification.

The following clarifications are applicable to drawings and specifications for the project referenced above.

ITEM 1: An adjustment was made to the Construction Administrator staffing reported in 01 11 00 Summary of Work.

RESPONSE (1): **In Section 01 11 00, Paragraph 1.6.A, ADD the following:**
3. Contact: Eileen Eagle
a. Phone: 860-754-7603
b. e-mail: Eileen.eagle@arcadis.com

ITEM 2: Specification Sections 22 11 23 Domestic Water Booster Pump and Section22 05 33 Heat Trace for Pipes were noted as being omitted from Specifications Volume 2.

RESPONSE (2): **INSERT Specifications**
Section 22 11 23-Domestic Water Booster Pump and
Section 22 05 33-Heat Trace for Pipes transmitted with this Addendum 2.

ITEM 3: Confusion was reported over pagination of blank pages used to force the title pages to the right-hand leaf and the number of pages reported in the Table of Contents.

RESPONSE (3): **DELETE the Table of Contents, Section 00 30 00 General Statements for Available Information, and Division 01 in its entirety.**
REPLACE with the Table of Contents, Section 00 30 00 General Statements for Available Information, and Division 01 in its entirety, transmitted with this Addendum 2

ITEM 4: A preliminary (10/24/19) version of Section 26 56 19 Sports Lighting was bound in Volume 2 in error.

RESPONSE (4): **DELETE Section 26 56 19 Sports Lighting dated 10/24/19**
REPLACE with Section 26 56 19 Sports Lighting dated 12/01/20 as transmitted with this Addendum 2.

ITEM 5: Section 01 25 00-Substitution Procedures published in the Specification was noted as having been superseded in the State Documents Catalog.

RESPONSE (5): **The current Section 01 25 00-Substitution Procedures is transmitted as part of the Item 3 response.**

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ITEM 6: Bidder Question:
Rock unit prices shown in spec section 01 20 00 page 5 of 6 are only to be used for changes made by the owner that are adding scope of work.
The deduct value listed will not be used as there is no agreed rock quantity listed within the allowance.

RESPONSE (6): **Confirmed**

ITEM 7: Bidder Question:
All rock excavation is to be included within our base bid and only rock in change orders will be paid under the unit price.

RESPONSE (7): **Confirmed - The site is Unclassified with respect to excavation work.**
The unit prices for rock removal shall be utilized only if the Owner elects to add scope to the project.

ITEM 8: Bidder Question:
The $75000 allowance for utility company fees does not reflect an add or deduct.
Will this allowance cover direct costs from the utility companies?
Will all remaining/unused portions of this allowance be credited back at the end of the project?

RESPONSE (8): **Confirmed.**
The allowance is intended to cover direct costs of the utility companies.
Any unused amounts will be credited back to the Owner at the end of the project.

ITEM 9: Bidder Question:
Spec section 03 32 19 calls for the contractor to carry 8 tests pits. These pits are not listed within the allowance table in spec section 01 20 00. If these 8 test pits are not used would the owner be looking for a deduct at the completion of the project.

RESPONSE (9): **Include the 8 test pits called for in Section 01 20 00 in the Base Bid.**
If the Engineer does not require these test pits, the Owner will not seek a credit from the Contractor.

ITEM 10: Bidder Question:
Spec section 01 20 00 has 4 columns for impacted soil / regulated soil with a basis of adjustments noted as "Negotiated Time and Materials"
Are we to assume all controlled material will be paid T&M?

RESPONSE (10): **Quantities identified in the Documents shall be removed from the site as base bid scope.**
Materials to be removed from the site in excess of the base bid scope, as determined by the Owner's environmental engineer, will be compensated on a negotiated Time and Materials basis.
The Owner's environmental engineer will characterize, quantify, and identify materials required to be removed in excess of base scope and will verify the in-situ quantities to be removed.

ITEM 11: Bidder Question:
The ATC report page 5 of 5 lists a quantity of soil for impacted Zone #3 at 412 CY, The in -situ map provided in the same report has a volume of 833 CY for Zone 3. Which volume is correct?

RESPONSE (11): **Zone 3 is 412 CY.**
In ATC's letter report dated January 5, 2021, in regard to the Figure 2 attachment entitled "In-Situ Soil Characterization Sampling (Site Plan) and dated 01/05/2021, DELETE the 833 number under volume (cubic yards) for Impacted Zone #3 and REPLACE with 412 cubic yards as presented on Page 5 of ATC's letter report.
Drawing L0.1 DELETE references to the quantity "833" and REPLACE with the quantity "412CY."

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ITEM 12: Bidder Question:
Spec section 01 50 00 calls for temporary fence as indicated on the construction Documents. The current plans do not show any temporary fence. Are we to include temp fence around the site? If so, what height fence is required?

RESPONSE (12): **Specific to the base bid work at the Upper Fields: there is no temporary construction fence required.**

(12a.) **Specific to Supplemental Bid #1 at the Lower Fields: there is a construction fence and appurtenant gate called for on the Drawings, to be included in Supplemental Bid #1. Please refer to Drawing SB-1 C 1.2-Site Preparation and Demolition Plan. The fence shall be a minimum of 6' high.**

ITEM 13: Bidder Question:
The specs note that the owner will be using an office space within the school.
Spec section 01 50 00 requires the contractor to provide a copier with consumables for the project duration.
Please provide a copier model number or specification to be used for pricing the printer and service.

RESPONSE (13): **Section 01 50 00 Temporary Facilities and Controls is amended to ADD:**

3.3 C 1 a. Provide a Canon Image Runner Advance C35301 with functionality to copy, scan, send, and print in color and black-and-white in 8.5x11 and 11x17 formats.
3.3 C 1 b Maintenance and consumables are understood to include ink cartridges and paper.

ITEM 14: Bidder Question:
Will any further utilities, supplies or other be required to be supplied to the Owners field office?

RESPONSE (14): **Section 01 50 00 Temporary Facilities and Controls is amended to ADD:**
3.3 C 2 Provide a 5-gallon water cooler with monthly water service and paper cups for the duration of the Project.

ITEM 15: Bidder Question:
Spec section 01 50 00 Temp facilities requires a Project Sign.
This is phase 4 of the Project.
Will a project sign be required?

RESPONSE (15): **Yes. The Project Sign is described on Sheet "INFO 1.1"**
The location will be identified by the Owner at the commencement of construction.

ITEM 16: Bidder Question:
Spec section 01 32 16.13 requires the contractor to supply the owner with a copy of scheduling software.
P-6 comes in a contractor version as well as a professional version.
Please specify the version required and if maintenance will also be required.

RESPONSE (16): **The requirement to provide the Owner with this software is hereby deleted.**
Section -01 32 16.13: DELETE 1.4 B 2.

ITEM 17: Bidder Question:
Please advise if DAS Construction Services would reconsider eliminating or lowering the Cost Estimate requirements for this project, Section 00 45 14 Bidders Qualification Statement, Item #11.

RESPONSE (17): **No. The State will not consider this request.**

ITEM 18: Bidder Question:
Plan sheet L1.2 calls for an area encompassed by a purple dashed line (approx. 25,000 SF) to have a crushed stone underlay per Geotech sheet 4. Please verify that the intent is to use the detail on Sheet D4 (not sheet 4) which shows 15" of 3/8 stone under this area.

RESPONSE (18): **Correct - Refer to Geotech Sheet D4 for section of area with crushed stone underlay.**

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ITEM 19: Drawing L2.2 Nomenclature referencing "Sheet 4" is incomplete.

RESPONSE (19): **REPLACE references to "Sheet 4" with "Sheet D4" on Drawing L2.2.**

ITEM 20: Bidder Question:
The 15" layer of 3/8 stone shown in the Geotech sheet D4 runs beneath the track pavement, the landscape area, the bleachers and the paved walks. All of these areas have different depth requirements to their subgrade elevation. Is it the intent to have the 15" stone layer move up or down to match the makeup of the surface layer? Or are we to assume added gravel, topsoil, [or] process to make of the difference and hold the 15" layer of 3/8 stone level and uniform.

RESPONSE (20): **The layer of stone underlay is directly related to the elevation of the stone wedge underdrain below the paved bituminous swale, which is where any water in the stone underlay will drain to. The 15" stone underlay is separate from the other materials and would pitch towards the underdrain. As such, the elevation of the top of the stone underlay 40' from the bituminous paved swale, with a 1% minimum pitch towards the underdrain below the paved swale, would vary between 107.40' -108.70', which would be below the 16" gravel depth elevation of the bituminous concrete sidewalk detail 9/T5.0 and bituminous concrete track section detail 2/T5.1. To eliminate additional fill materials between the gravel subbase and the stone underlay, the pitch of the stone underlay can vary from the 1% minimum to a maximum of 4.5%. In lawn areas, fill is required between the top of the stone underlay and the bottom of the topsoil.**

ITEM 21: Bidder Question:
Plan sheet T5.0 detail 8 calls for 12" of base stone on top of an area referring to spec section 32-20-00 for subgrade requirements.
Is the 12" base stone to be placed directly on subgrade (On site materials) or are we placing the 12" stone base on top of and 8" layer of CT DOT Granular fill as shown on sheet D4 of the Geotech?

RESPONSE (21): **The 12" of base stone underneath the synthetic turf field, as shown on Plan Sheet T5.0 Detail 8, is to be placed on top of the 8" layer of CT DOT compacted granular fill as shown on Sheet D4 of the Geotech.**

ITEM 22: Bidder Question:
The proposed Sanitary runs at approximately 9 feet deep from the field house and across the 3:1 slope adjacent to the parking lot. The depth of this line will require blasting and handling of large boulders within the slope. The depth will also increase the disturbance of the slope.
Can this line be raised to 4 feet below grade to reduce the depth, disturbance and rock excavation required?

RESPONSE (22): **No, this line cannot be raised.**
Vertical separation (clearance) is required to the access road storm pipe.
Refer to Drawing C 5.1, Site Roadway Profile for additional information.

ITEM 23: Bidder Question:
Are there any additional Borings or test pit information for the proposed drainage line behind the bleachers. The current information does not fully show the amount of surface Rock / Water that will be found in this area.

RESPONSE (23): **All available borings and test pits for the site have been included in the documents.**
Bidders are allowed and encouraged to make additional investigations of sub- surface conditions at the site during the bidding period with their own forces.
Any onsite investigations performed by a bidder must be scheduled and coordinated in advance through Arcadis, the Owner's onsite representative.

ITEM 24: Bidder Question:
Please confirm that blasting will be allowed during school hours.

RESPONSE (24): **Confirmed. Blasting must be scheduled and coordinated with the school through the Owner's onsite representative, Arcadis. Full statutory compliance coordinated through the local fire marshal is required. Please refer to the specifications for more information.**

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ITEM 25: Request for Substitution made to allow an additional premanufactured bleacher Deck System.

RESPONSE (25): **The Substitution Request was reviewed, and the product determined to be acceptable.**

(25a.) **For Section 131250 Grandstand Seating System, please make the following changes:**

Part 1.2 B. 3 – DELETE sentence and REPLACE WITH the following:
"Fully closed aluminum double lock welded deck system or interlocking style deck system.

(25b.) **Part 2.2 – ADD the following:**

"The decking system shall be a fully closed welded system or an interlocking decking system with incorporated gutters. The interlocking decking system shall meet or exceed the performance capabilities of the welded decking system."

ITEM 26: Request for Substitution made to allow an alternative premanufactured bleacher Press Box System.

RESPONSE (26): **The Substitution Request to permit a 100% steel fabricated Press Box was reviewed and the product determined to be acceptable.**

The 100% steel fabrication shall meet or exceed the performance capabilities of the wood construction press box.

ITEM 27: Request for Substitution made to allow an alternative bleacher riser and closure system.

RESPONSE (27): **The Substitution Request was reviewed, and painted aluminum found to be acceptable in this application.**

(27a.) **For Section 131250 Grandstand Seating System, please make the following changes:**

Part 1.2 B. 6 – DELETE sentence and REPLACE WITH the following:
"Polyboard or painted aluminum system on front of grandstand and sides of ramp and stairs."

(27b.) **Part 2.2 H – ADD the following:**
"A painted aluminum vertical riser panel can be used in lieu of a poly panel vertical riser system. The painted aluminum system shall meet or exceed the performance capabilities of the poly panel vertical system."

All questions must be **emailed** (not **verbal** or by **phone**) to the consulting Architect/Engineer: Richard Brown, AIA, Principal, Moser Pilon Nelson Architects, Email: rbrown@mpn-arch.com with copies sent to the DAS/CS Project Manager (Dennis G. Tovey, PE, Email: Dennis.Tovey@ct.gov) Construction Administrator, Arcadis U.S., Inc.: Brian Oblon, Email: Brian.Oblon@arcadis-us.com

End of Addendum 2

Mellanee Walton

Mellanee Walton, Associate Fiscal Administrative Officer
State of Connecticut
Department of Administrative Services, Construction Services
Office of Legal Affairs, Policy, and Procurement
450 Columbus Boulevard, Suite 1302
Hartford, CT 06103

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. The General Provisions of the Contract, including General and Supplementary Conditions and General Requirements, apply to the work specified in this Section.

B. The requirements in Section 23 05 00 shall also govern the work under this section.

C. Refer to Section 01 78 30 “Warranties and Bonds” for warranty requirements applicable to the work of this section.

1.2 SECTION INCLUDES

A. Factory fabricated and terminated Mineral Insulated (MI) heating cable assembly.

B. Field terminated Self Regulating (SR) heating cable.

C. Field terminated Constant Wattage (CW) heating cable.

D. Thermostats

E. Monitor/Control panels

F. Pipe heat tracing accessories and installation material for a complete operating system.

1.3 REFERENCES

A. Canadian Standards Association (CSA).

B. Factory Mutual (FM).

C. National Electric Code (NEC) - NFPA 70, 2014 edition as amended by the State Building Code.

D. Underwriter's Laboratory (UL) - Directory of UL Listed Products.

1.4 SUBMITTALS

A. Submit under provisions of Section 01 33 00.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
1. Preparation instructions and recommendations.
2. Storage and handling requirements and recommendations.
3. Installation methods.

C. Shop Drawings:
1. Layout of heating equipment and cable.

2. Details of system.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications:
1. Minimum 45 years' experience in design, engineering, manufacture and support of specified system and components.

B. Product Requirements:
1. Pipe Trace or Tank Trace - Temperature Maintenance: Consult the Manufacturers Pipe Tracing Design Guide to determine recommended w/ft. for installation. Design shall consider maintenance temperature, ambient temperature, pipe size, insulation type and thickness, and environmental conditions.
2. Heating equipment furnished under this section shall be supplied by a single manufacturer.
3. UL Listed or CSA Certified Mineral Insulate pipe or tank tracing cable assemblies:
   a. MI pipe or tank tracing cable assembly shall be factory assembled, immersed in water for a minimum of 12 hours, and then tested for insulation resistance, high potential breakdown and continuity before leaving the factory.
4. UL Listed, CSA Certified or FM Approved Self Regulating cable.
5. FM Approved Constant Wattage cable.
6. UL Listed Thermostat and Contactor panel.
7. UL Listed, CSA Certified or FM Approved Control/Monitor Panel.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.7 PROJECT CONDITIONS

A. Coordinate installation of heating cable with Electrical Contractor and Mechanical Contractor.

B. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer. Do not install products under environmental conditions outside manufacturer's limits.

1.8 WARRANTY:

A. All parts of the work and all equipment shall conform to warranty requirements specified by Section 01 78 30 Warranties and Bonds.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. System shall be manufactured by:
Delta-Therm Corporation, P.O. Box 345, Wauconda, IL, Phone: 800-526-7887,
Fax: 847-526-4456, Email: info@Delta-Therm.com, Web: www.Delta-Therm.com

B. Subject to compliance with requirements, provide the named system and components, or a comparable electric heat trace system with comparable components as manufactured by Reychem, Chromolox or Danfoss.

2.2 HEATING CABLE

A. Factory Terminated Mineral Insulate (MI) Cable assembly:
1. UL Listed Mineral-Insulated, copper or stainless steel sheathed, series resistance heating cable.
2. Single conductor or dual conductor configuration.
3. Insulator shall be Magnesium Oxide.
4. Fiberglass Insulator is not permitted.
5. Cable heater construction shall consist of termination in factory and spliced to stranded connection leads.
6. No combustible materials between conductor wire and ground sheath.
7. Cross section of heated portion of cable not to exceed 0.4 inch (10 mm).
8. Pigtails shall be of sufficient length to reach junction boxes or power panel as shown on detailed drawings. Connection leads shall be of stranded wire to provide maximum flexibility for ease in pulling to junction boxes or panel. Only connection leads in conduit shall exit from heated zone.
9. Cable rating shall be:
   a. 208 VAC

B. Field Terminated Self Regulating (SR) Cable assembly:
1. Self Regulating cable construction shall consist of two 16 AWG, stranded, nickel plated copper bus wires between which a positive temperature coefficient conductive polymer heating element is placed.
2. Cable shall have tinned copper braid and:
   a. Non-organic corrosive resistant jacket (CBT).
   b. Organic corrosive resistant jacket (CBF).
3. Cable shall be terminated using approved Manufacturers power connection and end termination kits.
4. Cable rating shall be:
   a. 208 VAC

C. Field Terminated Constant Watt (CW) Cable assembly:
1. The constant watt cable construction shall be parallel resistance 12 AWG stranded nickel-plated copper bus wires individually encased in:
   a. Extruded FEP Teflon™ jacket (type PF High Temp cable).
   b. Sintered PTFE Teflon™ jacket (type PT Ultra High Temp cable).
2. A nichrome wire heating element shall be wrapped around the jacket and fastened to alternating bus wires at 24” to 48” (zone lengths vary between models).
3. The jacket and nichrome wire construction shall be encased in a color coded insulated jacket and identified with a marker.

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4. Cable shall be terminated using approved Manufacturers power connection and end termination kits.
5. The Stainless Steel ground braid meets NEC requirements as stated in article 427-23.
6. Cable shall have a maximum maintenance temperature of 200° F and a maximum exposure temperature of 400° F (if encased in extruded FEP Teflon™ jacket-type Delta-Therm PF cable).
7. Cable shall have a maximum maintenance temperature of 400° F and a maximum exposure temperature of 550° F (if encased in sintered PTFE Teflon™ jacket-type Delta-Therm PT cable).
8. Self Regulating cable is not acceptable for this application.
9. Cable rating shall be:
   a. 208 VAC

2.3 CONTROLS

A. UL Listed Single Circuit type PowerTrace Monitoring Thermostat:
1. Thermostat input voltages shall be 120VAC, 208VAC, 240VAC, or 277VAC.
2. Enclosure shall be NEMA 4X FRP.
3. Thermostat shall have setpoint range from 32º F to 800º F
4. Thermostat shall have standard RTD rated at 400° F. (When maintaining temperatures above 400° F, Please contact Manufacturer for more information).
5. Enclosure shall have three button key pad and digital LED display on the front panel door.
6. Thermostat shall be electronic line sensing with monitoring and load switching capabilities.
7. Thermostat shall monitor pipe temperature.
8. Thermostat shall have adjustable setpoint temperature.
9. Thermostat shall have 30mA ground fault alarm.
10. Thermostat shall have RTD failure alarm.
11. Thermostat shall have low and high temperature alarm.
12. Thermostat shall monitor current.
13. Thermostat shall have low current alarm.
14. Thermostat shall have internal key pad lock-out
15. Single circuit monitoring thermostat shall be:
    a. Model ETC-208/240

B. CSA Certified Multiple Circuit MasterTrace Monitoring Thermostat:
1. Thermostat shall be electronic line sensing
2. Thermostat input voltages shall be 208/240
3. Enclosure shall be NEMA 4 steel, powder coat painted black
4. Enclosure shall have LCD digital display on the panel door
5. Thermostat shall have setpoint range from 0º to 511º F or C
6. Thermostat shall have standard RTD rated at 200º C
7. Thermostat shall have low and high temperature alarm
8. Thermostat shall have current failure alarm
9. Thermostat shall have ground fault alarm
10. Thermostat shall have RTD failure alarm
11. Thermostat shall have remote monitoring

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C. Thermostat:
   1. Thermostat shall be:
      a. Line sensing.
      b. Ambient sensing.
   2. Enclosure shall be:
      a. NEMA 1 rated
      b. NEMA 4 rated.
      c. NEMA 4X rated.
      d. NEMA 7 rated.
      e. NEMA 9 rated.
   3. Thermostat shall be set to activate at the maintenance temperature.

D. Enclosed UR Listed Contactor Panel:
   1. NEMA 1 rated contactor enclosure shall contain 4-pole contactors rated at 50A (resistive).
   2. Contactor coil voltage 120 VAC.
   3. Contactor Panel shall be:
      a. DT-4P40A
      b. DT-8P40A
      c. DT-12P40A
      d. DT-16P40A

E. Power Control Panel with G.F.P.E.:
   1. Controller shall have a NEMA 1 rated panel enclosure with one GFPE per circuit and one green "working" LED and one red "trip" LED per circuit.
   2. One red "System On" LED, one green "Control Power On" LED, and one Amber "Trip Indicator" LED on panel door.
   3. Interior G.F.P.E. Test button and include Dry alarm contacts.
   4. Power Control Panel Model shall be:
      a. GFPE-2-N
      b. GFPE-4-N
      c. GFPE-8-N
      d. GFPE-12-N

F. Custom Control Panel Specification

G. Accessories: Fiberglass tape, caution labels, aluminum tape, and stainless steel banding, monitor light.

H. Provide spare contacts to tie into Building Energy Management System.

PART 3 EXECUTION

3.1 EXAMINATION

A. Installer to verify field measurements are as shown on Drawings.

B. Installer to verify that required power is available, in proper location, and ready for use.

C. Do not begin installation until substrates have been properly prepared.

D. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

A. Clean surfaces prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer.

3.3 INSTALLATION

A. Complete installation shall conform to appropriate local codes.

B. Install heating cables in accordance with detailed layout drawings and manufacturer's instructions.

C. Band heating cable to pipe with tape wraps approximately every 12 inches.

D. Locate heating cable on pipe per manufacturer's instructions.

E. Where heating cable is scheduled to heat plastic pipe, attach aluminum tape length of pipe and band heating cable on aluminum tape to evenly distribute heat.

F. Mineral Insulate (MI) Cable Installation

1. Pull stranded connection leads through conduit from tee condulets to junction boxes.

2. Do not pinch or make sharp bends in cable.

3. Tape heating cable hot-cold junction to pipe.

G. Self Regulating (SR) Cable Installation

1. Terminate non-power end of cable per termination kit instructions.

2. Do not pinch or make sharp bends in cable.

3. At power termination mount power connection standoff and junction box per power termination kit instructions. The electrical connection shall be made per the termination kit instruction and all local codes.

4. All splice connections shall be made per the kit instruction and all local codes.

5. Install monitor lights per the kit instruction and all local codes.

H. Constant Watt (CW) Cable Installation

1. Identify the heating zone (every 24" to 48") before cutting cable leaving at least 12 inches for terminating the cable.

2. Terminate non-power end of cable per termination kit instructions.

3. Do not pinch or make sharp bends in cable.

4. At power termination mount power connection standoff and junction box per power termination kit instructions. The electrical connection shall be made per the termination kit instruction and all local codes.

5. Install monitor lights per the kit instruction and all local codes.

3.4 FIELD QUALITY CONTROL

A. Test continuity of heating cable.

B. Perform Insulation Resistance (IR) or "Megger" test on each heating cables before, during, and after pipe insulation has been installed. Insulation resistance should be greater than 10 megohms.

C. Measure voltage and current at each unit after pipe installation is installed.

D. Enter the total resistance and insulation resistance readings on the warranty card.

E. Annually check system for loose or damaged cable.

3.5 ADJUSTING AND CLEANING

A. Adjust system controls and instruct Agency's representative/Operator.

3.6 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before the Date of Substantial Completion.

END OF SECTION 22 05 33

ADDENDUM 2, Item 2

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

A. The General Provisions of the Contract, including General and Supplementary Conditions and General Requirements, apply to the work specified in this Section.

1.2 EXAMINATION OF SITE AND DRAWINGS:

A. Before submitting his bid, Contractor shall visit site with plans and specifications in hand, shall consult with the Engineer and shall become thoroughly familiar with all conditions under which his work will be done since he will be held responsible for any assumptions he may make in regard thereto.

B. The Contractor shall verify and obtain all necessary dimensions at the building.

C. Certain present building clearances are available for handling equipment.
All equipment shall be delivered knocked down as necessary to clear restrictions.

1.3 INTENT:

A. Finished Work: The intent of the specifications and drawings is to call for finished work, completed, tested and ready for operation.

B. Good Practice: It is not intended that the drawings show every pipe, fitting or minor detail and it is understood that while the drawings must be followed as closely as circumstances will permit, the systems shall be installed according to the intent and meaning of the Contract Documents and in accordance with good practice.

C. Work under this Section shall include giving written notice to the Agency within 15 days after the Award of the Contract of any materials of apparatus believed inadequate or unsuitable or in violation of any laws or codes, or items of work omitted. In the absence of such written notice, it is mutually agreed that work under each Section has included the cost of all required items and labor for the satisfactory functioning of the entire system without extra compensation.

D. Any apparatus, appliance, material or work not shown on drawings but mentioned in specifications or vice versa, or any incidental accessories necessary to make the work complete and perfect in all respects and ready for operation, even if not particularly specified, shall be furnished and installed by Contractor at no additional cost to Agency.

E. Prior to receipt of bids, Contractors shall give written notice to Engineer of any materials or apparatus believed inadequate, unsuitable or in violation of laws, ordinances, rules or regulations of authorities having jurisdiction and any necessary items or work omitted.
In the absence of such written notice, it is mutually agreed that Contractor has included the cost of all required items in his proposal and that he will be responsible for approved satisfactory functioning of systems without further compensation.

F. In all cases where apparatus is herein referred to in singular number, it is intended that such reference include as many such items as are required to complete work.

G. If not otherwise specified or shown on plans, apparatus and materials shall be installed in accordance with manufacturer's published recommendations and instructions and to the complete satisfaction of the Architect.

H. It is the intent of these specifications for Plumbing Contractor and/or their subcontractors or equipment suppliers to furnish all equipment complete with all accessories.

1.4 SCOPE OF WORK:

1. Steel base
2. Pumps and motors
3. Piping, valves and fittings
4. Control panel

A. This contract includes all labor, material, equipment, tests and appliances required to furnish and install all plumbing as shown on drawings, implied and herein specified.

B. The location of the building will be as shown on drawings. A visit to the site and examination of the Architectural, Structural and other Mechanical trades showing all details of construction is a requirement before submitting a proposal.

C. The drawings are diagrammatic and indicate the general arrangement of piping and equipment, and do not show all minor details and fittings. Such items shall be included, as well as reasonable modifications, in the layout as directed to prevent conflict with other trades.

1.2 REFERENCES

A. Hydraulic Institute
B. ANSI - American National Standards Institute
C. NEMA - National Electrical Manufacturers Association
D. UL - Underwriters Laboratories. Inc.
E. ETL - Electrical Testing Laboratories
F. CSA - Canadian Standards Association
G. NEC - National Electrical Code
H. ISO - International Standards Organization
I. IEC - International Electrotechnical Commission
J. NSF - NSF International

1.3 SUBMITTALS

A. SUBMITTALS SHALL INCLUDE THE FOLLOWING:

1. System summary sheet
2. Sequence of operation
3. Shop drawing indicating dimensions, required clearances and location and size of each field

connection

4. Power and control wiring diagrams
5. System profile analysis including pump curves and system curve
6. Pump data sheets

1.4 QUALITY ASSURANCE

A. Manufacturer shall assume "Unit Responsibility" to ensure that all components effectively interface to properly execute the sequence of operation specified herein. An assembler of pumping packages not engaged in the design and manufacture of centrifugal pumps shall not qualify as a manufacturer of pumping systems.

B. The manufacturer shall have a minimum of 30 years experience in the design and construction of domestic water pressure booster systems.

C. The package pressure booster shall be hydraulically tested to 125.0 psi g.

D. Manufacturer shall be listed by Manufacturer shall be listed by UL as a manufacturer of packaged pumping systems under Ul/cUL category QCZJ.

E. The pump control panel shall be listed by and bear the label of Underwriter's Laboratory, Inc. (UL/cUL). The controller shall be specifically designed for pressure booster applications.

F. Manufacturer shall be listed by UL as a manufacturer of packaged pumping systems under Ul/cUL category QCZJ and pump package shall bear labeling note this.

G. The pumping package shall be certified by an approved independent testing and certification organization as being compliant with the requirements of NSF/ANSI 61 for potable drinking water and NSF-61 Annex G for low lead content.

H. The manufacturer's production facility shall be certified by an approved independent testing and certification organization as being compliant with the requirements of NSF/ANSI 61 and NSF-61 Annex G. The manufacturing facility shall be subjected to periodic inspections and audits.

I. A copy of manufacturer's certificate of insurance showing as a minimum, a general liability coverage of $1,000,000, and an excess liability coverage of $10,000,000.

PART 2 PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

Subject to compliance with these specifications, the following manufacturers shall be acceptable:

1. Goulds Water Technology
2. Bell & Gossett

2.2 CONDITIONS OF SERVICE

The pump package shall provide flow of 55 gpm at 57 psi g to the pump package discharge with a minimum suction pressure of 7.1FT.

Incoming electrical power shall be acceptable within limited performance parameters:

- 460V 3-Phase

2.3 MANUFACTURED UNIT

A. Furnish and install as shown on the plans an AquaBoost VS or an AquaBoost CS Pressure Booster System as manufactured by Goulds Water Technology.

B. The pump package shall utilize 1 simplex stainless steel Goulds Water Technology NPE Pumps, in conjunction with the constant speed or variable speed pump controllers as manufactured by Goulds Water Technology. Appropriate check and shutoff valves, pressure sensors, suction/discharge piping, pump and electrical protection shall be integrated into the pump package. System connections shall be plain ended Copper sweated for sweat connection for duplex and NPT for simplex systems.

C. The entire package assembly shall be listed and bear the label of a nationally recognized test lab.

D. System shall require a single point power connection.

E. The AquaBoost VS shall provide constant pressure boost of 20.0 psi g - 55.0 psi g with flow capacities up to 220.0 gpm (Duplex).

F. Pumps shall be the manufactured product of a US manufacturer, producing and selling pumps for a minimum of 125 years.

G. Motors shall meet standard NEMA specifications and shall be of the size, voltage and enclosure called for on the plans. Motors used on AquaBoost VS packages will be TEFC rated minimum Class-F insulation.

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2.4 COMPONENTS

A. GENERAL: The packaged pumping system shall be constructed with Type L - Copper headers for duplex units and Class 150 components for simplex. Unit shall be rated for 125.0 psi g working pressure and maximum temperature of 125ºF with standard seal or 250ºF with optional high temperature seal. Headers shall be easily removable to allow for service access and moving the package through doorways. The system shall start upon a drop in system pressure, and will regulate the speed of the pumps to maintain constant pressure under variable flow. The system will stop upon detection of no-flow.

B. PUMPS: Pumps shall be constructed of 304 or 316L stainless steel and rated for a minimum 125.0 psig working pressure. Casings shall have gauge ports and vent and drain ports at the top and bottom of casing. Pumps shall be centrifugal, closed-coupled end suction Goulds Water Technology NPE. Pump case, impellers, diffusers, seal spring, inner bowls, seal spring, shaft sleeve and retainer clip shall all be manufactured from stainless steel. Shaft bushing (if needed) shall be from ceramic. Mechanical seal assembly shall be constructed of Carbon/ Silicon Carbide/ Viton as standard. Seat elastomers and casing o-rings shall be from Viton. Shaft sleeve shall be from stainless steel. Pump curve shall rise continuously to shut off head. Best efficiency point of pump shall lie between 70% and 80% of maximum flow capacity of the pump. Pump connections shall be NPT or ANSI flanged. Pump shall accept a standard NEMA C-face motor or JM frame and shall not re¬quire a specialty motor with special thrust bearings or integrated VFD. Pumps shall have thrust balanced within the pump.

C. MOTORS: Motor(s) shall be of United States manufacture, C-face or JM frame type open drip proof or TEFC enclosures 1.15 service factor, Min class F insulation. Motors shall be wound for the starting configuration as called out in the technical data sheet. Design pump brake horsepower shall not exceed 100% of motor horsepower exclusive of service factor. The motor shaft shall be high-strength steel. Motors shall be wound with ISR (Inverter Spike Resistant) wire for use with VFD's. Motor manufacturer must provide letter of compatibility of motor with another type of variable frequency or variable speed drive.

D. CONSTANT SPEED CONTROL PANEL: The control shall be rated for NEMA 1. The panel includes a control power transformer, H-O-A switch(es), green light for pump run indication, red light to indicated until shut down, and a minimum run timer to prevent short cycling.

E. VARIABLE SPEED DRIVES: The variable speed drives shall be Goulds Water Technology Aquavar CPC variable speed controller rated NEMA 1, or Goulds Water Technology AquaBoost II variable speed controller rated NEMA 3R. A station disconnect switch shall be mounted in a NEMA 1 panel.

	Aquavar CPC	
3-Phase:	1 or 2 pump VS, 1.5-thru-5 HP	Aquavar CPC

The Aquavar CPC or AquaBoost II shall provide an adjustable carrier frequency with IGBT power switching, and utilize PWM technology. The drive shall provide noiseless operation of the driving motor, short circuit and ground protection, and work with controlled sinusoidal current synthesis and dynamic over current limitations. Additional control panels, PLC's or other external devices, shall NOT be necessary to accomplish complete pump programming and variable speed control of pump and motor. Standard variable frequency drives that do not incorporate pump

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control logic as the primary control software; programming and features directly applicable to centrifugal pump applications shall not be considered equal. Standard system hydraulic settings shall include at a minimum the following functions: loss of suction, lack of NPSHa, pump run-out protection, "dead-head" protection, constant pressure setting with variable flow capability, pressure sensor error, overpressure shutdown, and low flow shutdown.

F. SEQUENCE OF OPERATION: The system shall start upon a drop in system pressure, and will regulate the speed of the pumps to maintain constant pressure under variable flow. The system will stop upon detection of no-flow.

G. PUMP PACKAGE BASE: The pump package base shall be designed and fabricated to provide proper structural support for all attached equipment, and provide anchor bolt support. The base shall supply sufficient rigidity to withstand the stresses of reasonable and competent transportation to site, off loading, installation, and operation. Base shall be constructed from 0.3 in formed steel. Provisions shall be made in the station base for off-loading and handling the station at the site of installation. Formed base shall include steel plate mounted under pump and motor and shall be of compact design for most standard doorways.

H. PIPING: Type L - Copper headers for duplex units and Class 150 components for simplex. Suction and Discharge manifolds shall be designed and constructed for minimal friction loss and compact design for most standard doorways.

I. VALVES: Isolation valves shall be provided for each pump for duplex units only. Each pump shall be equipped with a spring-loaded non-slam silent check valve, appropriately sized to allow no greater than 5.0 psi g of head loss at full station rated capacity. Check valves 2.0 in and below shall have a brass body and PTFE Teflon seat. Check valves 2.0 in and below shall be pressure rated to 400.0 psi g WOG.The operation of the valve shall not be affected by the position of installation. When pump is retired, valve shall function to close tightly before flow is reversed, and reducing the possibility of water hammer or shock.

J. PAINT: The finish coat shall be acrylic enamel to a thickness of no less than 3 mils.

K. OPTIONAL SHIP-LOOSE ITEMS

1. Low Suction Pressure Cut-out Switch; range: 10-100 psig.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install equipment in accordance with manufacturer's instructions.

B. The contractor shall align the pump and motor shafts to within the manufacturer's recommended tolerances prior to system start-up.

C. Power wiring, as required, shall be the responsibility of the electrical contractor. All wiring shall be performed per manufacturer's instructions and applicable state, federal and local codes.

D. Control wiring for remote mounted switches and sensor / transmitters shall be the responsibility of the controls contractor. All wiring shall be performed per manufacturer's instructions and applicable state, federal and local codes.

3.2 DEMONSTRATION/TRAINING

A. The system manufacturer's factory qualified representative shall be capable of providing optional start-up of the packaged pumping system. This start-up shall include verification of proper installation, system initiation, adjustment and fine tuning. Start-up shall not be considered complete until the sequence of operation, including all alarms, has been sufficiently demonstrated to the owner or owner's designated representative. This job site visit shall occur only after all hook-ups, tie-ins, and terminations have been completed and signed-off on the manufacturer's start-up request form.

B. The system manufacturer's factory qualified representative shall be capable of providing on-site training for owner's personnel. This training shall fully cover maintenance and operation of all system components.

C. The system manufacturer must have an optional complete pressure booster training program available for owner's personnel. The training sessions shall take place at the manufacturer's facility and cover all aspects of pressure booster system design, service and operation.

3.3 WARRANTY

A. The manufacturer shall warrant the water pumping system to be free of defects in material and workmanship for 18 months from date the Agency has accepted the installation. Complete terms and conditions will be provided upon request.

B. The complete VFD shall be warranted by the manufacturer for a period of 72 months from date of shipment. The warranty shall include parts, labor, travel costs and living expenses incurred by the manufacturer to provide factory authorized on-site service. The warranty shall be provided by the VFD manufacturer and not a third party. A written warranty statement shall be provided with the submittals.

3.4 START-UP SERVICE

A. Owner start up assistance will be provided by a manufacturer qualified representative and will be limited to one 8-hour day, unless previously negotiated by the factory representative. When discharge piping, electrical connections, and electrical inspection have been completed, the pump station representative shall be contacted for start up. A minimum two-week notice shall be given to the manufacturer qualified representative prior to scheduled start up date. During start up, the complete pumping system shall be given a running test of normal start and stop, and fully loaded operating conditions. During this test, each pump shall demonstrate its ability to operate without undue vibration, or overheating, and shall demonstrate its general fitness for service. All defects shall be corrected and adjustments shall be made to the pumping station for satisfactory

operation. System problems or concerns will be corrected by the general contractor or site station staff, in conjunction with the appropriate factory qualified representative. Testing shall be repeated until satisfactory results are obtained, as determined by the engineer.

END OF SECTION 22 11 23

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DIVISION 00 PROCUREMENT AND CONTRACTING REQUIREMENTS

ADDENDUM 2, Item 3

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TECHNICAL SPECIFICATIONS

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DIVISION 15	RESERVED

DIVISION 16	RESERVED

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(continued)

DIVISION 17	RESERVED

DIVISION 18	RESERVED

DIVISION 19	RESERVED

DIVISION 20	RESERVED

DIVISION 21	**FIRE SUPPRESSION**	**Not Used ☒**
DIVISION 22	**PLUMBING**	**Not Used ☐**

Section No.	Title	Page Count
22 05 00	Common Work Results for Plumbing	24
22 05 33	Electric Heat Trace for Pipes	7
22 07 00	Plumbing Insulation	6
22 11 23	Domestic Water Booster Pump	8

DIVISION 23	**HEATING, VENTILATING AND AIR CONDITIONING**	**Not Used ☐**

Section No.	Title	Page Count
23 05 00	Common Work Results For HVAC	19
23 05 93	Testing, Adjusting And Balancing For HVAC	5
23 07 00	HVAC Insulation	6
23 31 13	Metal Ducts	8

DIVISION 24	RESERVED

DIVISION 25	**INTEGRATED AUTOMATION**	**Not Used ☒**
DIVISION 26	**ELECTRICAL**	**Not Used ☐**

Section No.	Title	Page Count
26 00 00	General Electrical	8
26 05 00	Basic Electrical Materials & Methods	13
26 20 00	Service And Distribution	7
26 41 00	Lightning Protection	4
26 50 00	Lighting	4
26 56 19	Sports Lighting	8

DIVISION 27	**COMMUNICATIONS**	**Not Used ☒**
DIVISION 28	**ELECTRONIC SAFETY AND SECURITY**	**Not Used ☐**

Section No.	Title	Page Count
28 31 00	Intelligent Reporting Fire Detection System	20

DIVISION 29	RESERVED

DIVISION 30	RESERVED

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End of Section

[i] Addendum 2-Division 01 entries repaginated.
[ii] Addendum 2 Section included in Project Manual omitted from ToC

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00 30 00 GENERAL STATEMENTS FOR AVAILABLE INFORMATION NOT USED ☐

A. **Summary:** This Section is **not** a Bidding Document, but directs Bidders to **Division 50 00 00 Project-Specific Available Information** that provides project-specific information available for review by Bidders.

B. **Bidder Responsibility:** The Bidder is responsible for information, including but not limited to, any interpretations and opinions of information contained in any plans, reports, evaluations, and logs, or shown on any drawings, or indicated on any drawings. **Division 50 00 00 Project-Specific Available Information** is provided to Bidders for their use in the preparation of a Bid.

C. **Measurement:** **Division 50 00 00 Project-Specific Available Information** **shall** be utilized for determination of payment for the Work during construction of the project.

D. **Payment:** **No** separate payment will be made for **any** Work under **Division 50 00 00 Project-Specific Available Information**.

E. **Related Sections:** Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section. **See Division 50 00 00 Project-Specific Available Information** for information that is available for this Project.

F. Please read the following **General Statement(s)** that describe the type of project-specific information that is available in **Division 50 00 00 Project-Specific Available Information:**

00 30 00	General Statements for Available Information Table of Contents	Not Used
00 30 10	General Statement for Existing Conditions Information	☒
00 30 20	General Statement for Environmental Assessment Information	☐
00 30 30	General Statement for Hazardous Building Materials Inspection and Inventory	☒
00 30 40	General Statement for Subsurface Geotechnical Report	☐
00 30 50	General Statement for Elevator Agreement	☒
00 30 60	General Statement for FM Global Checklist for Roofing Systems	☒
00 30 70	General Statement for "Statement of Special Inspections"	☐
00 30 80	General Statement for Other Information	☒

00 30 10 GENERAL STATEMENT FOR EXISTING CONDITIONS INFORMATION Not Used ☐

A. **"Existing Conditions Information"** for this project is located in **Division 50 00 00 Project-Specific Available Information, Section 50 10 00 Existing Conditions Information** at the end of the Technical Specification Sections.

1. The information is made available for the convenience of all Bidders and is not a part of the Contract.
2. All Bidders must interpret this information according to their own judgment and acknowledge that they are not relying upon the information shown as accurately describing the conditions which may be found to exist.
3. Other components of the information, including but not limited to recommendations, may not be relied upon by the Bidders. The Owner shall not be responsible for any interpretation.
4. All Bidders further acknowledge that they assume all risk contingents upon the nature of the existing conditions which shall be actually be encountered by them.

5. All Bidders should visit the site and become acquainted with all existing conditions in relationship to this information and may make their own investigations to satisfy themselves as to the existing conditions. Such investigations shall be conducted only under time schedules and arrangements approved in advance by the Owner.

B. **Existing Drawings:** Includes information on existing conditions including previous construction at Project site.

C. **Survey Information:** Includes information on existing building and site conditions at Project site.

00 30 20 GENERAL STATEMENT FOR ENVIRONMENTAL ASSESSMENT INFORMATION Not Used ☐

A. **Description of Work:**

1. Soil Contamination Report:

1.1 A Soil Contamination Report has been prepared for this Project and is located in Division 50 00 00 Project-Specific Available Information, Section 50 20 00 Environmental Assessment Information at the end of the Technical Specification Sections.

2. Groundwater Contamination Report:

2.1 No Groundwater Contamination is known at the time of Bid.

00 30 30 GENERAL STATEMENT FOR HAZARDOUS BUILDING MATERIALS INSPECTION AND INVENTORY Not Used ☒

00 30 40 GENERAL STATEMENT FOR SUBSURFACE GEOTECHNICAL REPORT Not Used ☐

A. **Related Documents:**

1. **Division 02: Site Construction**

B. **Description of Work:**

1. **Boring Logs:**

1.1 The Boring Logs have been prepared for the site of this Work and are in the Contract Documents.

2. **Geotechnical Report(s):**

2.1 The Subsurface Geotechnical Report(s) has been prepared for the site of this Work and is located in **Division 50 00 00 Project-Specific Available Information, Section 50 40 00 Subsurface Geotechnical Report** at the end of the Technical Specification Sections.

2.2 The Contractor must interpret this report according to his own judgment and acknowledges that he is not relying upon the data as accurately describing the subsurface conditions which may be found to exist.

2.3 The Contractor further acknowledges that he assumes all risk contingents upon the nature of the subsurface conditions which shall be actually encountered by him in performing the Work of this Contract.

2.4 The Contractor should visit the site and become acquainted with all existing conditions and may make their own subsurface investigations to satisfy themselves as to the sub-surface conditions. Such investigations shall be conducted only under time schedules and arrangements approved in advance by the Owner.

00 30 50 GENERAL STATEMENT FOR ELEVATOR AGREEMENT Not Used ☒

00 30 60 GENERAL STATEMENT FOR FM GLOBAL CHECKLIST FOR ROOFING SYSTEMS Not Used ☒

00 30 70	GENERAL STATEMENT FOR "STATEMENT OF SPECIAL INSPECTIONS"	Not Used ☐

A. The "Statement of Special Inspections" for this project is located in **Division 50 00 00 Project-Specific Available Information, Section 50 70 00 Statement of Special Inspections** at the end of the Technical Specification Sections.

00 30 80	GENERAL STATEMENT FOR OTHER INFORMATION	Not Used ☒

End of Section
00 30 00 General Statements for Available Information

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ADDENDUM 2, Item 3

PART 1 - GENERAL

1.1 PROJECT IDENTIFICATION

A. Project Numbers - Caption all Project correspondence and documents constituting a project record with the Project Numbers:

1. DCS Project Number: BI-Rt-877A.

2. OSCGR Project Number: 900-0014.

B. Project Title:

1. Athletic Fields Construction, Ella T. Grasso Technical High School.

C. Project Location:

1. 189 Fort Hill Road, Groton, Connecticut.

1.2 PROJECT DESCRIPTION

A. This Scope constitutes final portions of a multi-phased Project and includes the Work to construct the Upper and Lower Athletic Fields with appurtenant utilities and program structures, solicited as a Base Bid and one Supplemental Bid.

B. The Construction of these improvements at the new Technical High School is performed under a Lump Sum contract.

C. Prior Site-related Work has been completed according to the original phased construction sequence generally known as:

1. Phase One – (complete) construct the new Technical High School and associated site-work including walks and drives incidental to the building.

2. Phase Two - (complete): Abate, remediate, and demolish the existing building.

3. Phase Three, (substantially complete): New Bus Garage and New Green House

a. Construction is anticipated to be complete prior to the commencement of this Work and is referenced here only for awareness. Closeout activities of Phase-Three that may overlap this scope with respect to duration are understood to have no consequential effect on this Work.

D. The Work of this scope is Phase Four and includes the Upper Athletic Field and appurtenant improvements solicited as the Base Bid, and the Lower Field with its related improvements solicited as Supplemental Bid-1.

1. **Base Bid Athletic Fields,** (aka, “Upper Field”) generally includes:

a. Athletic Field

1) Surplus earth removal.

2) Grading, sub-base, base, and related drainage to support an artificial turf athletic playing surface with line markings and fixed goals.

3) Field lighting with FAA approved beacons

4) Spectator grandstand with press box

b. Circulation and landscape improvements, including:

1) Concrete retaining walls faced with brick.

2) Concrete pedestrian walks, ramps, and stairs with steel pipe handrails and guards

3) Bituminous concrete roadway

4) Chain-link perimeter fence

5) New trees, shrubs, ornamental, and stabilization plantings

c. Civil and utility infrastructure, including:

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1) Potable Water distribution incidental to this use

2) Site storm drainage

3) Sanitary piping

4) Site Electrical distribution

d. New Field House

1) One story, brick veneer on CMU exterior walls, CMU partitions, wood truss, and asphalt shingle roof cover, containing.

a) Home and visiting team locker rooms, equipment storage, utility, concessions, and public toilet rooms.

2) Mechanical: ducted heat recovery ventilator with electric duct and unit heaters

3) Electrical: Local pad mounted transformer feeding panels controlling field lighting, and field house.

4) Fire Alarm connected to campus network.

5) Access-Controlled doors to locker rooms.

2. Supplemental Bid-1, (aka “Lower Field”)

a. Athletic Fields- baseball and softball

1) Grading, sub-base, base, and related drainage to support a natural turf athletic playing surface with line markings, fixed backstops, and dugout structures.

2) Site lighting for parking lot only,

3) Conduit provision for “future” scoreboard by others.

b. Circulation and landscape improvements, including:

1) Concrete pedestrian walks,

2) Bituminous concrete roadway

3) Chain-link perimeter fence,

4) New trees, shrubs, ornamental, and stabilization plantings

c. Civil and utility infrastructure, including:

1) Potable Water distribution incidental to this use

2) Site storm drainage

3) Sanitary piping

4) Site Electrical distribution

d. New Field House

1) One story, brick veneer on CMU exterior walls, CMU partitions, wood truss, and asphalt shingle roof cover, containing:

a) Equipment storage, utility, concessions, and toilet rooms.

e. Mechanical : ducted exhaust ventilation with electric unit heaters

f. Electrical: Local utility pole mounted transformer to new utility provided pole, to underground feed provided in this scope, to panel controlling field lighting, and field house.

1.3 KNOWN SCHEDULE CONSTRAINTS

A. Contract Time- has been determined to be 270 Calendar Days from the Construction Start Date to Substantial Completion for both the Base Bid (Upper Field) and Supplemental Bid 1 (Lower Fields).

B. Both the Base Bid and Supplemental Bid 1 if accepted, shall commence on the same Start Date for the purposes of Submittals, engineering layout, survey work, and construction activities.

C. Construction activities shall be scheduled to:

1. Upper Field construction starts on Construction Start Date;

2. Lower Field construction cannot start until June 1, 2021

1.4 OWNER:

A. The Owner is the State of Connecticut, Department of Administrative Services.

B. DCS/CS Project Manager Name: Dennis G. Tovey, P.E.

1. The DCS/CS Project Manager physical address is:

a. 450 Columbus Boulevard,
Suite 1201,
Hartford, CT 06103.

b. Phone: 860-306-8689.

c. Email: Dennis.Tovey@ct.gov.

2. Authority: The DCS/CS Project Manager is the sole representative of the Commissioner of the Department of Administrative Services authorized to act in matters involving any requirement of the contract documents.

a. Related Section: Article 25, All Work Subject To Control Of The Commissioner, Division 00 General Conditions Of The Contract For Construction For Contractor At Risk ().

C. Client Agency:

1. CTECS – Connecticut Technical Education and Career System,

2. Agency Representative Name and Title:

a. Donald Poulin, Chief of Engineering Services,

3. Agency Representative physical address:

a. Connecticut Technical Education and Career System
39 Woodland Street
Hartford, CT 06103

4. Agency Representative communication information”

a. Office: (860) 807-2010

b. Mobile: (860) 471-0362

c. Fax: (860) 807-2196

d. Donald.Poulin@cttech.org

5. Authority: The Agency Representative has the administrative authority for the facility and or site where the work is being performed but has no authority to change the contract documents or direct the Contractor.

6. The Authorities Having Jurisdiction for a Project that Exceeds the Threshold limitations are the Connecticut Department of Administrative Services (CT DAS) / Division of Construction Services (DCS) Office of State Building Inspector (OSBI) and CT DAS / DCS Office of State Fire Marshal (OSFM).

1.5 ARCHITECT AND ENGINEER:

A. Architect’s Name: The Architect representing the firm for this project is Richard B. Brown, AIA.

1. Architect’s Location: The Architect is located at:

a. Moser Pilon Nelson Architects, LLC,
30 Jordan Lane,
Wethersfield, CT.

b. Phone: 860-563-6164 ext. 230;

c. Email: rbrown@mpn-arch.com.

B. The Architect and Engineer (A/E) or their accredited representative is referred to in the Contract Documents as "Architect" or "Architects" or "Engineer" or "Engineers" or by pronouns which imply them. As information for the Contractor, the Architect's or Engineer's status is defined as follows:

1. The Architect and Engineer will make interpretations or decisions directly to the Contractor.

2. As the authorized representative of the Department of Administrative Services Commissioner, the Architect and Engineer is responsible for review of shop drawings, materials, and equipment intended for the work, in accordance with the "General Conditions", and the "Supplementary Conditions."

C. Wherever the Architect or Engineer is mentioned in the documents in connection with an administrative function, it shall include the Construction Administrator in that function except for shop drawings.

1.6 CONSTRUCTION ADMINISTRATOR (CA):

A. Construction Administrator Name: Arcadis U.S., Inc.

1. Construction Administrator physical address:

2. 213 Court Street,
Suite 700,
Middletown, CT 06457.

3. Site Contact: Eileen Eagle

a. Phone: 860-754-7603

b. Email(s): eileen.eagle@arcadis.com

4. Alternate Contact: Brian Oblon

a. Phone: 860-503-1508

b. Fax: 860-503-1520

c. Email(s): Brian.Oblon@arcadis-us.com

B. Authority: As information to the Contractor, the Construction Administrator status is defined as follows:

1. The Construction Administrator is referred to in the Contract Documents as Construction Administrator or by pronouns which imply it. The Construction Administrator will be included in all communications concerning the project.

2. The Construction Administrator is the Owner's Agent who will, among other things, monitor and analyze the Contractor's performance, scheduling and construction, monitor the progress of shop drawings, material, and equipment submittals, review and process periodic billings, review, analyze, and recommend cost changes.

1.7 CONTRACTOR

A. The Contractor will be named subject to the successful response to this Bid Offering.

B. Authority: Contractor is under direct Contract with the Department of Administrative Services, responsible for performing the Work under the Contract Documents. Whenever the words "Contractor" or "General Contractor" or "contractor" are used it shall be understood to mean Contractor.

C. Scope of the Contractor's Services: The Contractor will include all items required to carry out the intent of the Work to construct the new Technical High School as described, shown and implied in the Contract Documents.

1. It shall be the Contractor's responsibility upon discovery to immediately notify the Construction Administrator, in writing, of errors, omissions, discrepancies, and instances of non-compliance with applicable codes and regulations within the documents, and of any work which will not fit or properly function if installed as indicated on the Contract Documents. Any additional costs arising from the Contractor's failure to provide such notification shall be borne by the Contractor.

1.8 CONTRACTOR USE OF PREMISES:

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

indicated.

1. Owner Occupancy: Allow for Owner occupancy and use by the public of the existing high school and surrounding site.
2. The Contractor shall confine his operations including storage of materials, supplies, equipment, and apparatus to the areas bounded by the contract limits indicated and as directed in the Contract Documents.
3. Existing roads, drives, walks, and parking areas which are not within the contract limit line are to be kept unencumbered by construction operations at all times. The Contractor shall confirm accessibility and clearances of all roadways for deliveries of all large material and equipment.
4. All deliveries for the project are to enter the property as directed in the Contractor's approved logistics plan at times convenient to the operation of the School. The Contractor shall inform the Construction Administrator at least twenty-four (24) hours in advance of these deliveries so they can be coordinated with the Agency and appropriate traffic control, etc. can be provided. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site. Do not use non-designated areas for parking or storage of materials. .
5. The Contractor shall be responsible for keeping the premises clean and shall pick up rubbish and debris and promptly remove from site.
6. Parking for the Contractor's employees will be limited to an area designated by the Construction Administrator. The Contractor may be required to provide identification stickers for all employees' cars.
7. Special precautions shall be taken to protect all wetland areas created or designated to remain. Prevent any and all sediment, debris, or other materials from getting into these areas. Should any sediment, debris, or other materials get into these areas or if any damage occurs to the vegetation therein, the Contractor shall immediately contact the Construction Administrator for direction.
8. The Contractor shall comply with local working hour restrictions, unless specifically approved otherwise in writing by the Owner.
9. No signs, other than those approved by the Construction Administrator, will be visible on the premises.

1.9 OCCUPANCY REQUIREMENTS:

A. Agency Occupancy: The Owner reserves the right to allow the Agency to place and install equipment in completed areas of the building prior to Substantial Completion, provided such activity does not interfere with completion of the Work. Such placing of equipment shall not constitute acceptance of the total Work.

1.10 PRODUCTS ORDERED IN ADVANCE – (NOT USED)

1.11 OWNER-FURNISHED PRODUCTS:

A. The Owner may furnish various products as indicated in the construction documents. The Work includes providing support systems to receive Owner's equipment, and mechanical and electrical connections.

1. The Owner will arrange for and deliver necessary shop drawings and product data to the Contractor.
2. The Owner will arrange and pay for delivery of Owner-furnished items according to the Contractor CPM Schedule.
3. Following delivery, the Owner will inspect items delivered for damage.
4. If Owner-furnished items are damaged, defective, or missing, the Owner will arrange for replacement.
5. The Owner will arrange for manufacturer's field services and for the delivery of manufacturer's warranties to the Contractor.
6. The Contractor shall designate delivery dates of Owner-furnished items in the Contractor CPM Schedule.

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7. The Contractor is responsible for protecting Owner-furnished items from damage, including damage from exposure to the elements. The Contractor shall repair or replace items damaged caused by its operations.

1.12 MISCELLANEOUS PROVISIONS:

A. Examination of Site:

1. It is not the intent of the Documents to show all existing conditions. All Subcontractors are advised to attend the Contractor's Pre-bid Conferences prior to submitting their Bid Proposals to the Contractor. This is the only official opportunity to visit and examine the site concurrently with the Owner, Agency, Architect, Engineer and Construction Administrator all present.

2. The Contractor should investigate and satisfy themselves as to the conditions affecting the work, including but not restricted to those bearing upon transportation, disposal, handling and storage of materials, availability of labor, water, electric power, uncertainties of weather, roads or similar physical conditions of the ground, the character of equipment, and facilities needed preliminary to and during the prosecution of the Work. The Contractor should further satisfy themselves as to the character, quality, and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, as well as from information presented by the Contract Documents. Any failure by the Contractor to acquaint themselves with the available information shall not relieve them from the responsibility for estimating properly the difficulty and cost of successfully performing the Work.

3. General Statements for Available Information (Section 00 30 00) references project specific information filed as certain Division 50 00 00 Sections.

a. The Contractor and Trade Contractors must interpret the material offered as Available Information according to their own judgment and acknowledge that the Bidder is not relying upon the data as accurately describing the subsurface conditions which may be found to exist.

b. The Contractor and Trade Contractors further acknowledges that he assumes all risk related to the nature of the subject conditions, which shall be encountered by them in performing the Work of this Contract.

c. The Contractor and Trade Contractors should visit the site and become acquainted with all existing conditions and may make their own investigations to satisfy themselves as to the subsurface conditions. Such investigations shall be conducted only under time schedules and arrangements approved in advance by the Owner.

B. Pre-Bid Conferences:

1. Pre-Bid Conferences and tours of the site will be conducted as scheduled by the Owner in the Invitation to Bid. These scheduled conferences are the only official opportunity for the bidders to tour the site with the Owner, Agency, Architect, Engineer, and Construction Administrator all present.

C. Project Documents:

1. The Specifications and Drawings are intended to describe and illustrate the materials and labor necessary for the work of this Project.

2. Throughout the Technical Specifications, the Connecticut Department of Transportation Standard Specifications for Roads, Bridges, and Incidental Construction Form 816, current edition including any interim and supplemental specifications are referenced. Where so referenced the requirements set forth therein are applicable and made a part hereof. Copies of Form 816 are available from the Connecticut Department of Transportation at a nominal charge.

D. Site Logistics Plan(s):

1. Site Logistics Plan(s) for this Project shall be developed by the Contractor.

2. The Site Logistics Plan(s) describe in detail the proposed use of the Site and Building, both inside and outside the Contract Limit Area.

a. Related Section: Section 01 31 00-Project Management and Coordination work including

any relocation of utilities.

3. Site Logistics criteria are indicated in the Bid Documents. This expression of criteria shall not be submitted in lieu of an actual Logistics Plan.

E. Scope Review:

1. The Contractor will attend a pre-award scope review meeting with all major sub-contractors present. This scope review will highlight the specific requirements of the project, a review of the Contractor's procedures and all of the Technical sections of the contract documents as well as the contractor's proposed schedule for executing the work. The Contractor's Scope Review Meeting shall be held with the DCS/CS Project Manager, Architect/Engineer, and Construction Administrator in attendance.
2. This process will ensure that all of the Scope of Work included in the contract documents has indeed been included.
3. Drawings, Disks and Specifications Furnished:
4. The Contractor shall upon executing the Architect's form of liability release, receive one (1) Revit 2018 Building Model containing Architectural, Structural, and Mechanical on disk at no cost from the Architect on or about the time of execution of the Contract Amendment. Additional sets of AutoCAD compatible files (latest version) corresponding to Drawings issued as Documents will be made available from the Architect's cloud storage service at no cost to the Contractor.
5. The Contractor will be given one (1) set of the Contract Documents on or about the time of execution of the Contract, free of charge. If additional copies are wanted, they will be available at the direct additional cost of their reproduction, to the Contractor.

F.Construction Responsibility:

1. The Contractor shall be responsible for all construction means, methods, techniques, sequences, and procedures employed in the performance of all the of the Work and shall have full responsibility for any failures to carry out any part of the Work in accordance with the Contract Documents.

G. Overtime:

1. The Contractor shall request approval from the Owner to work overtime. Said request shall be made forty-eight (48) hours in advance. All costs for overtime are included in the Contract as stated in Amendment 1 to the Agreement Between Owner and Contractor.

H. PMWeb Project Management:

1. DCS is using PMWeb as the project management collaborative software tool for this project.
2. The Contractor is required to utilize PMWeb for the duration of this project and shall provide all project information via this program management software. This includes, but is not limited to contracts, applications for payment, change orders, change order proposals, requests for information, etc.
3. The DCS/CS Project Manager (or by the Construction Administrator) shall arrange for training. This training is for the Contractor's Staff, the DCS/CS project Manager, the Construction Administrator, the A/E, and their representatives.
4. DCS will be establishing a project specific email "file" address for this project. The Contractor shall send an electronic "file" copy of all project documents to this email address, to include but not limited to all project correspondence, project emails, forms, etc.
5. The Contractor is required to scan all documents that contain wet (ink) signatures and send a copy of those documents electronically to the DCS/CS Project Manager and the project specific email "file" address. The hard copy of the wet signature documents shall be transmitted as directed by the DCS/CS Project Manager. This includes, but is not limited to all contracts, change orders, applications for payment, closeout documentation, etc.

I. Subcontractor Performance Evaluations:

1. Pursuant to C.G.S. Sec. 4a-101, the Contractor shall compile evaluation information during the performance of the contract on each of its subcontractors who are performing work with a

value in excess of five hundred thousand dollars ($500,000.00). The Contractor shall complete and submit to DAS/CS evaluations of each such subcontractor upon fifty percent (50%) completion of the project and upon Substantial Completion of the project. The Contractor acknowledges that its failure to complete and submit these evaluations in a timely manner may, by statute, result in a delay in project funding and, consequently, payment to the Contractor. The Contractor agrees to indemnify and hold the State harmless from any loss, damage, or expense that results from or is caused by the Contractor's failure to complete and submit the evaluations to DAS/CS in accordance with this provision.

J. Reporting and Contracting Requirements for Contractor and Subcontractor Payments:

1. For compliance with C.G.S. Sec. 4b-95 and 49-41a, DAS/CS requires every Contractor (and its Subcontractors) who has been awarded a DAS/CS construction contract to log on to the State of Connecticut web-based platform, PMWeb, each month and enter payments they have received from the state, from the Contractor, or from a higher tier Subcontractor (as applicable).

2. The process is described as follows: After the state has made payment to the Contractor for work performed (and purchases made) by it and its Subcontractors, the Contractor will input the payment date and amount they receive from the state on a monthly basis. The Contractor's first-level Subcontractor (Tier 1 Subcontractor) will input the payment they receive from the Contractor. The second-level Subcontractor (Tier 2 Subcontractor) will input the payment they receive from the Tier 1 Subcontractor. And so on.

3. Contractors awarded a DAS/CS construction contract shall contain a provision in their subcontract agreements requiring their Subcontractors to enter payment receipt from the Contractor in the State of Connecticut web-based platform, PMWeb, for work performed or purchases made in relation to state projects.

4. Detailed instructions can be found in the DAS/CS publication, "6002 Instructions to Contractors/Subcontractors for Entering Payments Online", available for download from the online DAS/CS Library (http://portal.ct.gov/DASCSLibrary) > 6000 Series..

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION (NOT APPLICABLE)

END OF SECTION 01 11 00

[i] Addendum 2

ADDENDUM 2, Item 3

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The Construction Documents, consisting of Drawings, Specifications, and general provisions of the Contract, including Division 00 General and Supplementary Conditions and other Division 01 Specification Sections, are complimentary and apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Allowances.

2. Unit Prices.

B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Supplemental Section 01 26 00, "Contract Modification Procedures".

3. Section 01 29 76, "Progress Payment Procedures".

4. Section 01 77 00, "Closeout Procedures".

1.3 ALLOWANCE:

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

1. Scope items listed in the Schedule of Allowances identify values attributable to portions of the Work where certain minor details of known quantities are not fully specified at the time of Bid. Allowances are expressed as a cost per specified unit, allowed to purchase, receive, store, and handle that portion of work for which the installation, substrate preparation, and all costs incidental to installation have been included in the Base Bid with the respective allocation of overhead and profit. The Allowance amounts for the respective quantities shall be made part of the Base Bid and adjusted by change order if the cost or quantity changes.

2. The Schedule of Allowances may direct the allocation of Contractor's costs between the Base Bid Amount and the Allowance Amount subject to the customary practices of the installation. The total cost for any given installation shall be included in the Base Bid without regard for the apportionment of associated costs in the Schedule of Alternates.

3. The Schedule of Allowances may stipulate a Base Bid Quantity with Unit Prices for additions and deductions to that Base Bid Quantity.

4. Responsibilities of the Parties

a. Architect/Engineer Responsibilities:

1) Consult with Contractor for consideration of Products, suppliers, and installers.

2) Select Products in consultation with the Construction Administrator / Owner's Representative and transmit decision to Construction Administrator.

3) Prepare Change Order.

b. Construction Administrator / Owner's Representative Responsibilities:

1) Consult with Architect/Engineer, Contractor, DAS/CS Project Manager and Agency Representatives for consideration of Products, suppliers and installers.

2) Select Products in consultation with Architect/Engineer, DAS/CS Project Manager and Agency Representatives and transmit decision to Contractor.

3) Prepare Change Order.

c. Contractor Responsibilities:

1) Assist Architect/Engineer and Construction Administrator in selection of Products and Suppliers.

2) Obtain proposals from Suppliers and offer recommendations.

3) Document and present Change Orders in accordance with Section 01 26 00 "Contract Modification Procedures."

5. Allowance Procedure:

a. When an allowance stipulates a given quantity, the allowance will be calculated as required by the DEDUCT unit price listed. The DEDUCT unit price will be used to establish the allowance amount to be included in the Payment Application Schedule of Values and to adjust the allowance amount up or down by Change Order.

b. Overhead and profit for all allowances shall be included in the unit cost or unit labor rates used to derive the allowance value. The total cost of the allowance must be included in the base bid of the Contractor.

c. The Contractor shall include a separate line item for each allowance on the Schedule of Values and will be allowed to bill under these line items only when approved by the Construction Administrator / Owner's Representative.

d. The Construction Administrator / Owner's Representative will provide written authorization to the Contractor to perform work under an assigned allowance. The Contractor shall record this work on a time and material basis and submit that record at the end of each day the work was performed. Records submitted later than the day the work was performed will not be accepted.

e. When recording time and material work, the Contractor shall not include individual line items that are redundant to general conditions costs included in the Allowance Amount. This, for example, includes small tools, clean-up, general safety, and other similar costs.

6. The Contractor shall submit a PCO with their pencil application. The PCO shall have a summary of approved daily time and material reports, with an appendix of individual daily reports and the associated material and rental invoices.

7. A single change order will be issued at project close-out to credit any unused portion of the allowance and document the scope of work performed.

1.4 DEFINED UNIT PRICES GENERAL:

A. This Section includes administrative and procedural requirements for unit prices.

B. **Definition - Unit Price**: Amount the Contractor acknowledges in the Bid Proposal Form as a complete price per unit of measurement for materials or services as described in the Contract Documents.

1. Unit Prices are for items complete, in place, and ready for the intended service, and shall include all incidental Subcontractor costs, as well as all attributable General Requirements and General Conditions, inclusive of furnishing and installing, all material, labor, trucking, overhead, profit, equipment, hoisting, excavation, stockpiling, loading, engineering, scaffolding, power hookups, testing, balancing, protection, shop drawings, taxes, permits, appliances, delivery, disposal, insurance, supervision, cost of bond, etc. and shall remain in effect until completion of the Contract.

C. **Procedures**:

1. Should the amount of the Work required by the Contract Documents be increased or decreased because of changes in the Work ordered in writing by the Construction Administrator / Owner's Representative, the Contractor agrees that the PRICES," shown in the Unit Price Schedule shall be used for each unit of work modifying the base contract.

2. The Owner reserves the right to reject the Contractor's measurement of work-in-place that involves use of established unit prices, and to have this work measured, at the Owner's expense, by an independent surveyor acceptable to the Contractor.

3. **Defect Assessment**: Replace the Work, or portions of the Work, not conforming to the specified requirements. If, in the opinion of the Architect/Engineer, it is not practical to remove and replace the work the Architect/Engineer will direct an appropriate remedy or adjust the payment.

4. **Unit Price Schedule:** A "Unit Price Schedule" is included at the end of this Section. Specification Sections referenced in the Schedule contain requirements for materials described under each unit price, including $ ADD for an increase in work, $ DEDUCT for a decrease in work, and BASE BID

QUANTITIES that are to be included in the Bidders Lump Sum Base Bid.

1.5 UNIT PRICE SCHEDULE

A. Unit Price Schedule - Earth and Rock Excavation: This Section includes administrative and procedural requirements, and provisions that are to be used in evaluating additions to or deductions from the work called for in the Construction Documents. Subject to acceptance by the Construction Administrator / Owner's Representative and execution of a Change to the Contract, these provisions may be included in and become part of this Contract.

1. Contractors shall assume that the site characterization is "Unclassified" as it relates to Rock Excavation and Unsuitable Soils.

2. Rock prices are "net" in that allowances for reduced quantities of earth are also included in the unit prices. The prices given include all costs for overhead, profit and rock surveys.

3. In the event of a Change in Scope issued, where rock to be excavated is subsequently encountered, the Contractor shall strip or expose the rock to such an extent that in the Owner's opinion the necessary measurements can be taken. The Contractor shall provide the Owner with a survey by a licensed land surveyor indicating top of rock elevations at points of intersection on a rectilinear grid with lines spaced sufficiently close to show accurately the rock surface contours. At the Owner's option, an additional survey may be furnished by the Owner from a licensed surveyor.

B. Definitions:

1. "EARTH": Is defined as any naturally occurring material, with or without inclusions of man-made content, having characteristics permitting removal ("excavation") using manual or machine methods and shall include removal of all materials other than 'water' and 'rock'.

2. "ROCK": Is defined to include any naturally occurring solid mass or aggregate of minerals or mineraloid matter, irrespective of its geological category. The categories of rock considered under Unit Prices include :

a. A rock fragment ("boulder") of one cubic yard or more in volume uncovered in mass excavation or standing free as a surface feature.

b. A rock fragment 1/2 cubic yard or more uncovered in trench excavation,

c. Bedrock in ledge formation

d. Concrete or masonry structures of one cubic yard or more in volume, the removal of which requires the use of mechanical equipment or the use of explosives.

e. Rock removed by scarification or ripping method is considered as a separate classification.

3. "ORIGINAL GRADE": Is defined as being the grade which exists at the time of Contract Award.

4. "ROUGH GRADE": Is defined as being the completed surface of required excavations greater than 13' in width.

5. "MASS": Excavation is to be considered as an open area whose minimum horizontal dimensions exceed thirteen feet (13').

6. "TRENCH": is defined an area of material removal thirteen feet (13) or less, centered perpendicular to the longitudinal axis of the excavation and below the elevation of rough grade or original grade, whichever is lower.

C. Procedures:

1. Rock Excavation in Trenches: Basis for Horizontal Measurement:

a. Horizontal Measurements: Will be taken between the vertical planes as defined below.

b. The Minimum Width of Trenches in Rock: Will be taken as 3' 0".

c. Excavation for Walls or Piers with Footings: The measurements will be taken parallel to and one foot outside of the edges of the concrete footings as called for in the plans (i.e. for 4' 0" footing, rock will be taken as 6' 0" in width).

d. Excavation for Walls or Piers Without Footings: The limits of the excavation will be 1' 6" outside of

the line of concrete at bottom as shown or called for in the plans (i.e., for a wall with a bottom thickness of 1' 0", the width of the trench will be calculated as 4' 0"). (Caissons are excluded from these measurements).

e. Excavation for Pipelines: Will be measured at 2' 0" more than the nominal inside diameter of the pipe but in no case less than 3' 0" wide.

f. Excavation for Tanks, Vaults, Manholes, Pits, etc.: Will be measured as 2' 0" greater in both length and width or diameter than the actual exterior dimensions of the structures and this excavation is calculated as trench only if any measured horizontal dimensions is 13' or less.

g. No allowance will be made for rock removed beyond the above limits.

2. Rock Excavation in Trenches - Basis for Vertical Measurement:

a. To determine depth of trench, vertical measurements will be taken from original grade or rough grade, (whichever is applicable), to the bottom of required excavation. These measurements will define the maximum depths for payments.

b. To determine quantity of rock in trench, vertical measurements will be taken from the top of rock as encountered in the trench to 12" below the bottom of required rock excavation. Any over excavation below the required elevation shall be filled with concrete or other material as specified at no cost to the Owner.

c. No allowance will be made for rock removed beyond the above limits.

3. Earth Excavation in Trenches - Basis of Measurement: (Horizontal & Vertical): The basis of measurements and allowance limit for earth excavation in trenches is identical to that indicated for rock excavation in trenches, except that there will be no allowance for 12" below the required elevation. In addition, the following will prevail:'

a. Maximum allowable widths for earth excavation in trenches without shoring:

Trench Depth - Classification		Add to Nominal ID of Pipe or to Footing Width
	0 ft. - 6 ft.	3 ft.
Over	6 ft. - 10 ft.	5 ft.
Over	10 ft. - 15 ft.	7 ft.
For trenches greater than 15 ft. in depth the width of the trench shall be based on the individual case. The final depth of trench will determine the actual width for payment.		

b. If shoring is required, the measurement shall be taken between the exterior walls of the shoring not to exceed 4' plus the I.D. of the pipe (for all depths).

c. To determine quantity of earth in trench, vertical measurements will be taken from the original or rough grade to actual bottom of earth excavation required.

4. Unit Prices - Earth and Rock Excavation (Basis for Payment): Prices include backfill with excavated material if it is suitable. Prices also include all excavation and disposal of all surplus or unsuitable material. Where replacement with the excavated material is prohibited or a particular backfill material is specified, the cost of the delivered replacement material in a volume equal to the above excavation pay limits minus the volume of the items installed in the trench shall be paid for a prior negotiated price. Prices do not include costs of shoring and de-watering but do include sloping for sides of excavation. Payment and credit amounts shall be determined in the following manner: Widths and depths of trench excavation as indicated. The total quantity of earth or rock excavation encountered in each depth payment category shall be paid for at its respective unit price as shown below. For example, in a 15' trench the first 6' will be paid for at the 0' - 6' price; the next 4' will be paid for at the over 6' - 10' price and the next 5' will be paid for at the over 10' - 15' price. Thus, three different price brackets will prevail.

5. Allowances: Allowance amounts shown in the following tables shall be included as part of the base bid and are in addition to the quantities shown by Drawings. The Site Earthwork is categorized as "unclassified," as it relates to Rock Excavation and Unsuitable Soils. The Unit Costs in the following table are for use in calculating changes in Scope only.

1.6 SCHEDULE OF ALLOWANCES

1 - DIVISION 31 EARTHWORK (EXCAVATION)					
1.1 EARTH EXCAVATION - HAND		Allowance	Unit	$ Add	$ Deduct
1.1-1 IN TRENCHES - 0'. TO- 6'.		--	C.Y.	36.00	28.80
1.1-2 IN TRENCHES GREATER THAN 6 FT. IN DEPTH,		--	Prices Must Be Negotiated Before Work Is Started.		
1.2 EARTH EXCAVATION - MACHINE		Allowance	Unit	$ Add	$ Deduct
1.2-1 SHALLOW TEST PIT REFER TO SECTION 023219	0 – 6 feet deep	--	Each	500.00	400.00
1.3 ROCK EXCAVATION OPEN AREAS, ROCK REMOVED WITH EXPLOSIVES		Allowance	Unit	$ Add	$ Deduct
1.3-1 NET ROCK -TOTAL QUANTITY UP TO:		--	C.Y.	126.00	100.80
1.3-2 IN TRENCHES, BOULDERS, REMOVE BY MACHINE		--	C.Y.	215.00	172.00
1.3-3 IN TRENCHES, WITH EXPLOSIVES 0 - 15' DEEP		--	C.Y.	150.00	120.00
1.4 TRENCH OR MASS AREAS - IF EXPLOSIVES ARE PROHIBITED - NET ROCK		--	C.Y.	215.00	172.00
1.5 STRUCTURAL FILL – COMPACTED 12" LIFTS		--	C.Y.	48.00	38.40
1.6 EXCAVATION OF UNSUITABLE MATERIALS NOT IN TRENCHES		--	C.Y.	18.00	14.40
1.7 EXCAVATION OF UNSUITABLE MATERIALS IN TRENCHES		--	C.Y.	35.00	28.00
1.8 INSTALLATION OF PIPE BEDDING		--	C.Y.	43.00	35.00
1.9 FILL: 3/8" STONE IN 12" LIFTS W/ VIBRATORY COMPACTION		--	C.Y.	55.00	44.00
1.10 OTHER SITEWORK		Allowance	Unit	$ Add	$ Deduct
1.10-1 TEMPORARY CONSTRUCTION FENCE TO BE INSTALLED, MAINTAINED, AND REMOVED AT THE DIRECTION OF THE OWNER		--	L.F.	8.00	6.40
1.10-2 REMOVE HEAVY DUTY BITUMINOUS CONCRETE PAVEMENT IN ITS ENTIRETY INCLUDING: 2" WEAR COURSE, 2" BINDER COURSE, 8"PROCESSED STONE BASE, 12" GRAVEL SUB-BASE, AND GEOTEXTILE. REPLACE WITH 16" OF COMPACTED COMMON FILL PLUS 6" TOPSOIL SEEDED TO MATCH ADJACENT AND ABUTTING LAWN.		--	S.F.	5.50	4.40
1.10-3 WOOD GUARDRAIL TO BE FURNISHED, INSTALLED AT RETAINING WALL EXCAVATIONS. REMOVED AND DISPOSED OF ON COMPLETION.		--	L.F.	16.00	12.80

ADDENDUM 2, Item 3

1.11 REGULATED SOILS-REFER TO 50 02 00 FOR QUANTITIES AND CHARACTERIZATIONS	Basis of Adjustments			
1.11-1 REMOVAL OF IMPACTED ZONE #3 CONTAMINATED SOIL/FILL MATERIAL: EXCAVATE, STOCKPILE, LOAD OUT, TRANSPORT, AND DISPOSE OF OFFSITE	Negotiated Time and Materials			
1.11-2 REMOVAL OF IMPACTED ZONE #2 POLLUTED SOIL/FILL MATERIAL: EXCAVATE, STOCKPILE, LOAD OUT, TRANSPORT, AND DISPOSE OF OFFSITE				
1.11-3 REMOVAL OF IMPACTED ZONE #1 POLLUTED SOIL/FILL MATERIAL: EXCAVATE, STOCKPILE, LOAD OUT, TRANSPORT, AND DISPOSE OF OFFSITE				
2 - DIVISION 26 ELECTRICAL	Allowance	Unit	$ Add	$ Deduct
2.1 PROVIDE H-20 RATED SITE PULL BOX AS DETAILED ON DRAWINGS.	4	Each	1500.00	1200.00
2.2 PROVIDE UNDERGROUND SITE BRANCH CIRCUIT WIRING CONSISTING OF 3 X #8 AWG THWN CONDUCTORS IN 1" SCHEDULE 80 PVC CONDUIT. INSTALLATION TO BE IN ACCORDANCE WITH UNDERGROUND CONDUIT DETAIL ON DRAWINGS.	1000	L.F.	9.00	7.20
2.3 PROVIDE TYPE "E" EXIT SIGN LIGHT FIXTURE INCLUDING 20 FEET OF 3 X #12 AWG TYPE MC CABLE AND TERMINATIONS.	6	Each	550.00	410.00
2.4 PROVIDE TYPE MC CABLE, 3 X #12 AWG THHN SOLID COPPER CONDUCTORS, INSTALLED COMPLETE WITH SUPPORTS.	500	L.F.	3.75	3.00
2.5 PROVIDE 3/4" EMT COMPLETE WITH FITTINGS, SUPPORTS, AND TERMINATIONS.	500	L.F.	4.50	3.60
2.6 PROVIDE SURFACE DUPLEX RECEPTACLE COMPLETE WITH OUTLET BOX, EXPOSED WORK COVER, AND 20 FEET OF 3 X #12 AWG THWN SOLID CONDUCTOR COPPER BUILDING WIRE INSTALLED IN 3/4" EMT COMPLETE WITH SUPPORTS AND TERMINATIONS.	8	Each	110.00	88.00
2.7 PROVIDE FLUSH DUPLEX RECEPTACLE COMPLETE WITH OUTLET BOX, S.S. WALL PLATE, AND 20 FEET OF 3 X #12 AWG THHN TYPE MC CABLE COMPLETE WITH SUPPORTS AND TERMINATIONS.	8	Each	125.00	100.00
2.8 PROVIDE FLUSH EMPTY OUTLET BOX WITH 1 1/4" EMT CONDUIT STUB TO ABOVE ACCESSIBLE CEILING.	8	Each	65.00	52.00
2.9 PROVIDE ABOVE CEILING 1 1/4" EMT CONDUIT STUB THROUGH 8" CMU WALL.	4	Each	40.00	32.00
3 - DIVISION 28 ELECTRONIC SAFETY AND SECURITY	Allowance	Unit	$ Add	$ Deduct
3.1 PROVIDE ADDRESSABLE SEMI-FLUSH WALL MOUNTED FIRE ALARM STROBE COMPLETE WITH OUTLET BOX, 3/4" EMT CONDUIT STUB TO ABOVE ACCESSIBLE CEILING, AND 100 FEET OF PLENUM RATED TYPE FPLP FIRE ALARM CABLE COMPLETE WITH TERMINATIONS.	4	Each	350.00	280.00
4 - FEES	Allowance			
4.1 UTILITY COMPANY FEES (EX. WATER TAPPING, ELECTRICAL POWER TEMPORARY USAGE)	75,000			

ADDENDUM 2, Item 3

1.7 UNIT PRICE SCHEDULE – MISCELLANEOUS ITEMS (NOT USED)

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION (NOT APPLICABLE)

END OF SECTION 01 20 00

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements governing Supplemental Bids.

B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 00 Section 00 41 00 Bid Proposal Form
2. Division 01 Section 01 20 00 Contract Considerations
3. Division 01 Section 01 33 00 Submittal Procedures
4. Division 01 Section 01 60 00 Product Requirements

1.3 DEFINITIONS

A. Definition: "The monetary value stated in the Bid to be added to the amount of the Base Bid if the corresponding Work, as described in the Bidding Documents, is accepted." A Supplemental Bid is an amount proposed by bidders and stated on the Bid Proposal Form for certain work defined in the Bidding Documents that may be added to the Base Bid amount if the Owner decides to accept a corresponding change in either the amount of construction to be completed, or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.

1. The cost for each supplemental bid is the net addition to the Contract Sum to incorporate the Supplemental Bid into the Work. Supplemental Bids are only accepted in the numerical order that they are listed on the Bid Proposal Form and never accepted out of numerical sequence. No other adjustments are made to the Contract Sum.

1.4 PROCEDURES

A. Coordination: Modify or adjust affected adjacent Work as necessary to integrate that Work into the Project, completely and fully.

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

2. Consider all work that must be accomplished for complete incorporation of the Supplemental Bids including modifications to Base Bid items.

3. Include in lump sum prices for Supplemental Bids all costs of labor, materials, equipment, permits, fees, insurance, bonds, overhead, and profit.

4. Immediately after award of Contract, advise all necessary subcontractors, vendors, and suppliers as to which Supplemental Bids have been selected by Owner. Use all means necessary to alert those subcontractors, vendors, and suppliers involved as to all changes in the work caused by Owner's selection or rejection of Supplemental Bids.

5. Coordinate related work and modify surrounding work to integrate work of each Supplemental Bid.

B. Execute accepted Supplemental Bids under the same conditions as other Work of this Contract.

C. Schedule: A "Schedule of Supplemental Bids" is included at the end of this Section. It contains all of Specification Sections, and applicable portions of Drawings and Details that govern the scope, quality, and execution of work that is referenced in the Schedule and contain all of the requirements necessary to achieve the Work described under each Supplemental Bid.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION

3.1 SCHEDULE OF SUPPLEMENTAL BIDS

A. Supplemental Bid-1, (aka “Lower Field”)

1. Athletic Fields- baseball and softball

a. Grading, sub-base, base, and related drainage to support a natural turf athletic playing surface with line markings, fixed backstops, and dugout structures.

b. Site lighting for parking lot only,

c. Conduit provision for “future” scoreboard by others.

2. Circulation and landscape improvements, including:

a. Concrete pedestrian walks,

b. Bituminous concrete roadway

c. Chain-link perimeter fence,

d. New trees, shrubs, ornamental, and stabilization plantings

3. Civil and utility infrastructure, including:

a. Potable Water distribution incidental to this use

b. Site storm drainage

c. Sanitary piping

d. Site Electrical distribution

4. New Field House

a. One story, brick veneer on CMU exterior walls, CMU partitions, wood truss, and asphalt shingle roof cover, containing.

1) Equipment storage, utility, concessions, and toilet rooms.

5. Mechanical : ducted exhaust ventilation with electric unit heaters

6. Electrical: Local utility pole mounted transformer to new utility provided pole, to underground feed provided in this scope, to panel controlling field lighting, and field house.

END OF SECTION 01 23 13

ADDENDUM 2, Item 3

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for handling requests for equals and substitutions made after award of the Contract.

B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 01 Section 01 33 00 "Submittal Procedures" specifies requirements for submitting the Contractor's Construction Schedule and the Submittal Schedule.
2. Division 01 Section 01 42 20 "Reference Standards and Definitions" specifies the applicability of industry standards to products specified.
3. Division 01 Section 01 60 00 "Product Requirements" specifies requirements governing the Contractor's selection of products and product options.

1.3 DEFINITIONS

A. Definitions in this Article do not change or modify the meaning of other terms used in the Contract Documents.

B. **Equals or Substitutions General:** Changes in products, materials, equipment, and methods of construction required by the Contract Documents proposed by the Contractor after award of the Contract.

1.4 SUBMITTALS

A. **Equals and Substitution Request Submittals:** The Owner will consider requests for equals or substitutions if made prior to the Receipt of the Competitive Bid. The information on all materials shall be consistent with the information herein. After the contract award, substitutions will be considered for materials or systems specified that are no longer available. It will not be considered if the product was not purchased in a reasonable time after award. The Contractor shall submit all equal and substitutions requests on the **"Equal or Substitute Product Request (Form 7001)"**, an example of which is shown at the end of this Section. The Form is available from the Construction Administrator (CA). See Article 15 in the General Conditions for further refinement and information.

B. The Contractor is required to prepare and submit three (3) copies of the required data for the first manufacturer listed or procedure listed in the specifications section with reference to all of the following areas: the substance and function considering quality, workmanship, economy of operation, durability and suitability for purposes intended including the size, rating performance, LEED® compliance, and cost. All submissions must include all the required data for the first listed manufacturer or procedure as specified, as well as the required data for the proposed Equal or Substitution. This will enable the Owner and Architect to determine that the proposed Equal or Substitution is or is not substantially equal to the first listed manufacturer or procedure.

1. Identify the product or the fabrication or installation method to be replaced in each request. Include related Specification Section and Drawing numbers.

2. Provide complete documentation showing compliance with the requirements for equals or substitutions, and the following information, as appropriate:

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

b. A detailed comparison chart of significant qualities of the proposed substitution with those of the Work specified. Significant qualities may include elements, such as performance, weight, size, durability, and visual effect.

c. Product Data, including Shop Drawings and descriptions of products and fabrication and installation procedures.

d. Samples, where applicable or requested.

e. A statement indicating the effect on the Contractor's Construction Schedule or CPM Schedule compared to the schedule without approval of the Equal or Substitution. Indicate the effect on overall Contract Time.

f. Cost information, broken down, including a proposal of the net change, if any in the Contract Sum.

g. The Contractor's certification that the proposed Equal or Substitution conforms to requirements in the Contract Documents in every respect and is appropriate for the applications indicated.

h. The Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of the failure of the Equal or Substitution to perform adequately.

3. Architect's Action: If necessary, the Architect will request additional information or documentation for evaluation within **seven (7) days** of receipt of the original request for equal or substitution request. The Architect will notify the Construction Administrator who will notify the Owner of recommended acceptance or rejection of the proposed equal or substitution, within **fourteen (14) days** of receipt of the request, or **seven (7) days** of receipt of additional information or documentation, whichever is later. The Construction Administrator will give final acceptance or rejection by the Owner not less than **seven (7) days** after notification.

a. Any request deemed an "Equal" and accepted by the Construction Administrator, Architect, Owner, and Agency will result in written notification to the Contractor and will not be in the form of a change order for an "Equal".

b. Any request deemed a "Substitution" and rejected or approved by Construction Administrator, Architect, and Owner may result in written notification to the Contractor and may be in the form of a change order if the "Substitution" is approved.

PART 2 - PRODUCTS

2.1 EQUAL OR SUBSTITUTIONS

A. Conditions: The Architect will consider the Contractor's request for Equal or Substitution of a product or method of construction when one or more of the following conditions are satisfied, as determined by the Architect. If the following conditions are not satisfied, the Architect will return the requests to the Construction Administrator without action except to record noncompliance with these requirements.

1. The proposed request does not require extensive revisions to the Contract Documents.

2. The proposed request is in accordance with the general intent of the Contract Documents.

3. The proposed request is timely, fully documented, and/or properly submitted.

4. The proposed request can be provided within the Contract Time. However, the Architect will not consider the proposed request if it is a result of the Contractor's failure to pursue the Work promptly or coordinate activities properly.

5. The proposed request will offer the Owner a substantial advantage, in cost, time, energy conservation, or other considerations, after deducting additional responsibilities the Owner must assume. However, if the proposed request requires the Owner to incur additional responsibilities, including but not limited to, additional compensation to the Architect for redesign and evaluation services, increased cost of other construction by the Owner or similar considerations, then the Owner will have just cause to reject the request for Equal or Substitution.

6. The proposed request can receive the necessary approvals, in a timely manner, required by governing authorities having jurisdiction.

7. The proposed request can be provided in a manner that is compatible with the Work as certified by the Contractor.

8. The proposed request can be coordinated with the Work as certified by the Contractor.

9. The proposed request can uphold the warranties required by the Contract Documents as certified by the Contractor.

B. The Contractor's submission and the Architect's review of Submittals, including but not limited to, Samples, Manufacturer's Data, Shop Drawings, or other such items, which are not clearly identified as a request for an Equal or Substitution, will not be considered or accepted as a valid request for an Equal or Substitution, nor does it constitute an approval.

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01 25 00

ADDENDUM 2, Item 3

Request Phase: Pre-Bid ☐ Post Bid ☐ *(See Article 15 Materials: Standards, General Conditions)*

(If Pre-bid only) Current Bid Due Date: _____ Request No.: _____ Dated: _____

To: State of Connecticut
Department of Administrative Services,
Construction Services

DAS Project No.: _____

Project Name / Location: _____

References: Specification(s): Section(s): _____ Paragraph(s): _____

Drawing(s): Drawing(s) No(s): _____ Detail(s) No(s): _____

Contractually Specified Product: _____

Contractor Proposed Product: _____

Proposed Product is: Equal: ☐ Substitute: ☐ Model No.: _____

IMPORTANT:
See Attached Data For Both Specified And Proposed Products
As Required By Article 15 General Conditions.

Data attached: Drawings: ☐ Product Data: ☐ Reports: ☐ Samples: ☐

Tests: ☐ Other: _____

Reason(s) for not providing the Specified Product:

Similar Installation:
Project Name: _____ Architect's Name: _____

Project Location: _____ Owner's Name: _____

Date Installed: _____

Will proposed substitution impact other parts of the Work? No ☐ Yes ☐ *If Yes Attach An Explanation.*

Will proposed substitution increase Contract Time? No ☐ Yes ☐ *By Number Of Calendar Days* ____

Actual Dollar Savings to the State of Connecticut if substitution is accepted: $ ____

The Undersigned Certifies:
That The Proposed Request For An Equal Or Substitute Product Conforms To All Of The Requirements Of Division 01 General Requirements, Section 01 25 00 Substitution Procedures.

Request Submitted By General Contractor / CMR: ____
(Firm's Typed Name)

By: ____ *(Typed Name)* ____ *(Title)* ____ *(Signature)* ____ *(Date)*

Contractor / CMR Send copies to : DAS PM: ☐ CA: ☐

Consultant's Request Received on (Date): ____

Consultant's Review – This Substitution Request is:

☐ Approved: *(Submittal(s) in accordance with Div. 01 General Requirements, Section 01 33 00 Submittal Procedures.)*

☐ Approved as Noted: *(Submittals in accordance with Div. 01 General Requirements, Section 01 33 00 Submittal Procedures.)*

☐ Rejected: Use Specified Materials.

☐ Rejected: Request Not Received Within Specified Time Period - Use Specified Materials.

Reviewed Issued By:

Name: ____ *(Typed Name)*

Title: ____

Signature: ____ *(Signature)* ____ *(Date)*

CONSULTANT Send copies to: DAS PM ☐ CA ☐ Chief Architect ☐ Chief Engineer ☐

If Approved: As noted by Consultant,
DAS Chief Architect: ____ *(Signature)* ____ *(Date)*

Copies: Project File Red R2

END

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements for handling and processing contract modifications.

B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 01 Section 01 20 00 "Contract Considerations" for administrative requirements governing use of Unit Prices.

2. Division 01 Section 01 25 00 "Substitution Procedures" for administrative procedures for handling requests for substitutions made after award of the Contract.

3. Division 01 Section 01 29 76 "Progress Payment Procedures" for administrative procedures governing Applications for Payment.

4. Division 01 Section 01 32 16.13 "CPM Schedules" for requirements for CPM scheduling and reporting progress of work.

5. Division 01 Section 01 33 00 "Submittal Procedures" for requirements for submittal of the Construction Progress Schedule or CPM Schedule.

6. General Conditions “Article 13 - Compensation for Changes in the Work”.

C. All Forms referenced in this Section are available for download from the DAS website (www.ct.gov/DAS)> Doing Business With The State > State Building Construction > Publications and Forms > DAS Construction Services Library > 7000 Series - Construction Phase Forms.

1.3 REQUESTS FOR INFORMATION

A. In the event that the Contractor or subcontractor, at any tier, determines that some portion of the drawings, specifications, or other contract documents requires clarification or interpretation by the Architect, the Contractor shall submit a "Request for Information" in writing to the Architect via the Construction Administrator. "Requests for Information" may only be submitted by the Contractor and shall only be submitted on the "Request for Information" forms as required by the Owner.

1. In the "Request for Information", the Contractor shall clearly and concisely set forth the issue for which clarification or interpretation is sought and why a response is needed from the Architect.

2. In the "Request for Information", the Contractor shall set forth an interpretation or understanding of the requirement along with reasons why such an understanding was reached.

3. The Owner acknowledges that this is a complex project. Based upon the owner’s past experience with projects of similar complexity, the Owner anticipates that there will probably be some "Requests for Information" on this project.

4. The Architect will review all "Requests for Information" to determine whether they are valid "Requests for Information". If it is determined that the document is not a valid "Request for Information", it will be returned to the Contractor, unreviewed as to content, for resubmittal on the proper form and in the proper manner.

5. A "Request for Information Response" shall be issued within seven (7) days of receipt of the request from the Contractor unless the Owner determines that a longer time is necessary to provide an adequate response. If a longer time is determined necessary by the Owner, the Owner will, within seven (7) days of receipt of the request, notify the Contractor of the anticipated response time. If the Contractor submits a "Request for Information" on an activity with seven (7) days or less of float on the current project schedule, the Contractor shall not be entitled to any time extension due to the time it takes the Architect to respond to the request provided that the Architect responds within the seven (7) days set forth above.

6. A "Request for Information Response" from Architect will not change any requirement of the Contract Documents. In the event the Contractor believes that the "Request for Information Response" will cause a change to the requirements of the Contract Documents, the Contractor shall within five (5) days give written notice to the Construction Administrator stating that the Contractor believes the "Request for

Information Response" will result in a "Change Order" and the Contractor intends to submit a "Change Order Proposal" request. Failure to give such written notice within five (5) days shall waive the Contractor's right to seek additional time or cost under the requirement these Requirements.

1.4 MINOR CHANGES IN THE WORK

A. The Architect, through the Construction Administrator, will issue supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or Contract Time, on the "Supplemental Instructions" form as required by the Owner.

1.5 PROPOSAL REQUEST

A. Architect/Owner-Initiated Requests for Proposals: The Architect or Owner will issue a detailed description of proposed changes in the Work via the Construction Administrator that will require adjustment to the Contract Sum or Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications. Such requests shall be on a "Proposal Request" form as required by the Owner.

1. "Proposal Request" is issued for information only. Do not consider them as an instruction either to stop work in progress or to execute the proposed change.
2. Within **(14) days** of receipt of a "Proposal Request", submit a "Change Order Proposal" with the required information necessary to execute the change to the Construction Administrator for the Architect's/Owner's review.
    a. Include a list of quantities of products required and unit costs, with the total amount of purchases to be made. Where requested, furnish survey data to substantiate quantities.
    b. Indicate applicable delivery charges, equipment rental, and amounts of trade discounts.
    c. Include a statement indicating the effect the proposed change in the Work will have on the Contract Time.
    d. The Agency is tax exempt. All Contractor and Subcontractor services provided under your Contract with the State of Connecticut may not be exempt from taxes. The Department of Revenue Services can guide you as to which services are exempt and which are not. Please contact the State of Connecticut, Department of Revenue Services at 1-800-382-9463 or 860-541-3280.
    e. Dollar values shown on the Schedule of Values shall not be the governing (or deciding) final amounts for change orders involving either additional charges or deletions.

1.6 CHANGE ORDER PROPOSAL

A. When either a "Request for Information" from the Contractor or a "Proposal Request" from the Architect or Owner results in conditions that may require modifications to the Contract, the Contractor may propose changes by submitting a request for a "Change Order Proposal" to the Architect via the Construction Administrator on forms as required by the Owner. These forms shall also include "Change Order Proposal Workbook(s)" as required by the Owner.

1. Include statements outlining the 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 Contract Time.
2. Include a list of quantities of products required and unit costs, with the total amount of purchases to be made. Where requested, furnish survey data to substantiate quantities as directed by Article 13 of the General Conditions of the Contract for Construction.
3. Indicate applicable delivery charges, equipment rental, and amounts of trade discounts.
4. Comply with requirements in Division 01 Section 01 25 00 "Substitution Procedures" if the proposed change requires an equal or substitution of one product or system for a product or system specified.
5. The State of Connecticut construction contract has the following tax exemptions:
    a. Purchasing of materials which will be physically incorporated and become a permanent part of the project.
    b. Tools, supplies and equipment used in fulfilling the construction contract are not exempt.
    c. Services that are resold by the Contractor are exempt, i.e. if a Contractor hires a plumber, carpenter or electrician, a resale certificate may be issued to the subcontractor because these services are considered to be integral and inseparable component parts of the building contract

C. "Change Order Request" Forms: Use "Change Order Proposal" and "Change Order Proposal Worksheets" forms as required by Owner.

D. A "Change Order Proposal" cannot be submitted without either prior submission of a "Request for Information" from the Contractor or as a response to a "Proposal Request" submitted by the Architect or Owner.

E. Any "Change Order Request" submitted without a prior submittal of a "Request for Information" or as a response to a "Proposal Request" will be immediately rejected and returned to the Contractor.

1.7 CONSTRUCTION CHANGE DIRECTIVE

A. "Construction Change Directive":

When the Owner and the Contractor disagree on the terms of a "Change Order Proposal" resulting from either a "Request for Information" or "Proposal Request", then the Architect through the Construction Administrator may issue a "Construction Change Directive" on a "Construction Change Directive" form as authorized by the Owner. The "Construction Change Directive" instructs the Contractor to proceed with a change in the Work, for subsequent inclusion in a "Change Order".

1. The "Construction Change Directive" contains a complete description of the change in the Work. It also designates the method to be followed to determine change in the Contract Sum or Contract Time.
2. Contractor must proceed with the Work once a "Construction Change Directive" is issued.
3. The change in the Contract Sum and Contract Time resulting from the issuance of a "Construction Change Directive" will be based on "Time & Material" or "Unit Prices".
4. Issuance of "Construction Change Directive" does not guarantee payment for the Work described in the "Construction Change Directive".

B. Documentation: The Contractor shall maintain detailed records on a time and material basis of work required by the "Construction Change Directive".

1. After completion of the change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.
2. The final value shall be negotiated based on the supporting data to determine the value of the work.

1.8 CHANGE ORDER PROCEDURES

A. Upon the Owner's approval of a Contractor's "Change Order Proposal", the Construction Administrator will issue a "Change Order" for signatures of the Architect, Owner and the Contractor on a "Change Order" form as required by the Owner.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01 26 00

(B L A N K P A G E)

ADDENDUM 2, Item 3

PART 1 - PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section specifies procedures for preparation and submittal of the Contractor's Applications for Payment.

B. Related Sections: The following Sections contain requirements that relate to this Section.

1. Notice to Bidders: Article 10

2. General Conditions: Articles: 27 "Schedule of Values, Application for Payment"; 28 "Partial Payments"; 31 "Final Payment"; and 32 "Owner's Right to Withhold Payments".

3. Division 01 Section 01 32 16.13 "CPM Schedules" for requirements for CPM scheduling and reporting progress of work.

4. Division 01 Section 01 33 00 "Submittal Procedures".

5. Division 01 Section 01 77 00 "Closeout Procedures" for requirements for Final Payment.

1.3 SCHEDULE OF VALUES

A. **Coordination:** Coordinate preparation of the "Schedule of Values" with preparation of the CPM Schedule or Construction Schedule. Use "Schedule of Values" form as required by the Owner

1. Submit the "Schedule of Values" to the Construction Administrator at the earliest possible date but no later than **twenty-one (21)** days after Contract Start Date.

2. **Sub-schedules:** Where Work is separated into phases requiring separately phased payments, provide sub-schedules showing values correlated with each phase of payment.

B. **Format and Content:** Use the Project Manual Table of Contents as a guide to establish the format for the "Schedule of Values". Provide at least one line item for each Specification Section on electronic media printout.

1. **Identification:** Project identification on the Schedule of Values shall include, but not be limited to, the following:

a. Owner

b. Project Number

c. Project Name

d. Project Location

e. Contractor's name and address.

2. Arrange the "Schedule of Values" in tabular format as required by the Owner, containing separate columns including, but not limited to, the following Items:

a. Item Number.

b. Description of Work with Related Specification Section or Division Number.

c. Scheduled Values broken down by description number, type material, units of each material.

1) Include break down of General Condition requirements, i.e. bonds, insurance premiums, taxes, job mobilization, temporary facilities, field supervision and layout, operation and maintenance manuals, punch list activities, project record documents, demonstration and training, overhead, and profit as separate line items.

d. Name of subcontractor.

e. Name of manufacturer or fabricator.

f. Name of supplier.

g. Retainage.

h. Contract sum in sufficient detail.

3. Percentage of Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.

4. Provide a breakdown of the Contract Sum in sufficient detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual Table of Contents. Break principal subcontract amounts down into several line items. In addition, the following items listed below must be included.

a. **Site Logistics Plan (01 31 00):** a lump sum at 1/20 of one percent of the base bid total project cost at the time of submission of this plan.

b. **Coordination Drawings (01 31 00):** a lump sum of this cost for payment at the submittal of this product a minimum cost of 1/10th of one percent of the base bid total project cost or $5,000 whichever is greater.

c. **Submittal Schedule (01 33 00):** a lump sum payment calculated at 1/20th of 1% of the base bid total project cost upon receipt of the schedule

d. **Waste Collection & Cleaning (01 50 00):** a monthly cost. A minimum payment of $1,000 to $3,000 (based on size & complexity of the project) with forfeit of that monthly payment if not done.

e. **As-Built Updates (01 31 00):** a monthly cost, a minimum payment of $1,000 with forfeit of that monthly payment if not done.

f. **Start-up and Adjusting (01 75 00):** a lump sum cost upon completion. (to be determined by the DAS/CS Project Manager (PM) with Architect/Engineer and Construction Administrator (CA) advice)

g. **Schedule (01 32 16.13):** a lump sum payment upon receipt of the base line schedule. A payment of 40% of the total amount of the total cost which is to be calculated at 1/8th of one percent of the base bid total project cost. Monthly updates using the remainder of the cost divided evenly over the accepted schedule duration with a forfeit of the monthly payment of the update is not received on time.
Any forfeited amounts being withheld by the CA for non-performance will be adjusted at the final payment by a credit change order to the owner.

5. Round amounts to nearest whole dollar; the total shall equal the Contract Sum.

6. **Unit-Cost Allowances:** Show the line-item value of unit-cost allowances, as a product of the unit cost, multiplied by the measured quantity. Estimate quantities from the best indication in the Contract Documents.

7. **General Conditions:** Show line items for indirect costs and margins on actual costs only when such items are listed individually in Applications for Payment. Each item in the Schedule of Values and Applications for Payment shall be complete. Include the total cost and proportionate share of general overhead and profit margin for each item.

a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the Schedule of Values or distributed as general overhead expense, at the Contractor's option.

1.4 APPLICATIONS FOR PAYMENT

A. Each Application for Payment shall be consistent with previous applications and payments as certified by the Architect and Construction Administrator and paid for by the Owner.

1. The initial "Application for Payment", the "Application for Payment" at time of "Substantial Completion", and the final "Application for Payment", involve additional requirements.

B. **Payment-Application Terms:** The Owner will process monthly progress payments. The Contractor may submit applications for payment on a monthly basis.

C. **Payment-Application Forms:** Use the "Application for Payment" form as required by the Owner. Present the required information on electronic media printout or Owner approved form; multiple pages should be used if required.

1. For each item, provide a column including but not limited to the following items:

a. Item Number.

b. Description of Work and Related Specification Section or Division.

c. Scheduled Value, break down by units of material and units of labor.

d. Work Completed from previous application.

e. Work Completed this period.

f. Materials presently stored.

g. Total Completed and stored to date of application.

h. Percentage of Completion.

i. Balance to Finish.

j. Retainage.

D. **Application Preparation:** Complete every entry on the Application form. At the time of Final Payment only, include an executed Application form by a person authorized to sign legal documents on behalf of the Contractor. The Construction Administrator will return incomplete Applications without action.

1. Entries shall match data on the "Schedule of Values".

2. Include amounts of Change Orders issued prior to the last day of the construction period covered by the application.

E. **Transmittal**: Submit verifiable applications complete with lien wavers and supporting documentation to the Construction Administrator by an agreed method of secure digital transmission on or before the stipulated date.

1. Transmit each application bookmarked to identify constituent supporting documents contained in the application, in a manner acceptable to the Construction Administrator and Architect..

F. **Applications for Payment**: Administrative actions and submittals, that must precede or coincide with submittal of the first Application for Payment and all subsequent Application for Payments including, but not limited to, the following items:

1. List of subcontractors and suppliers' name, FEIN/Social Security numbers, and Connecticut Tax Registration Numbers.

2. List of principal suppliers and fabricators.

3. Schedule of Values.

4. Contractor's Construction Schedule (preliminary if not final).

5. Schedule of principal products.

6. Submittal Schedule (preliminary if not final).

7. List of Contractor's staff assignments.

8. List of Contractor's principal consultants.

9. Copies of all applicable permits.

10. Copies of authorizations and licenses from governing authorities for performance of the Work.

11. Proof that subcontractors have been paid amounts included on the Contractor's Application for Payment within thirty (30) days after the Owner has paid the Contractor for the particular Application for Payment in accordance with Connecticut General Statute § 49-41a (a)(1).

12. Releases of Lien from subcontractors with amounts included on the Contractor's Application for Payment when Contractor has been paid by the Owner for the particular Application for Payment but the subcontractors have not been paid.

13. Proof that as-built documents are updated as required by Section 01 77 00 "Closeout Procedures.

14. Initial as-built survey and damage report, if required.

15. Update the "Contractor's Master Subcontract Agreement List" and submit copies all recently executed Subcontract Agreements in accordance with CGS § 4b-96.

a. The "Contractor's Master Subcontract Agreement List" shall list all Subcontract Agreements in

order of Contract Sum magnitude (from high to low) in the following format:

Contractor's Master Subcontract Agreement List				
Subcontractor Name	Minority or Small Business Designation	Trade	Address	Contract Sum

16. In accordance with CGS § 42-158j (b):
Each payment requisition submitted shall include a statement showing the status of all pending construction change orders, other pending change directives and approved changes to the original contract or subcontract. Such statement shall identify the pending construction change orders and other pending change directives, and shall include the date such change orders and directives were initiated, the costs associated with their performance and a description of any work completed. As used in this section, "pending construction change order" or "other pending change directive" **means an authorized directive for extra work that has been issued to a contractor or a subcontractor and identified by an official Change Order Number or Construction Change Directive Number assigned by the State of Connecticut.**

G. Reporting and Contracting Requirements for Contractor and Subcontractor Payments:

1. For compliance with **C.G.S. Sec. 4b-95 and 49-41a**, DAS/CS requires every Contractor (and its Subcontractors) who has been awarded a DAS/CS construction contract to log on to the State of Connecticut web-based platform, **PMWeb**, **each month** and **enter payments** they have received from the state, from the Contractor, or from a higher tier Subcontractor (as applicable).

2. The process is described as follows: After the state has made payment to the Contractor for work performed (and purchases made) by it and its Subcontractors, the Contractor will input the payment date and amount they receive from the state on a monthly basis. The Contractor's first-level Subcontractor (Tier 1 Subcontractor) will input the payment they receive from the Contractor. The second-level Subcontractor (Tier 2 Subcontractor) will input the payment they receive from the Tier 1 Subcontractor. And so on.

3. Contractors awarded a DAS/CS construction contract shall contain **a provision in their subcontract agreements** requiring their Subcontractors to enter payment receipt from the Contractor in the State of Connecticut web-based platform, **PMWeb**, for work performed or purchases made in relation to state projects.

4. Detailed instructions can be found in the DAS/CS publication, **6002 Instructions to Contractors/Subcontractors for Entering Payments Online**, available for download from the online DAS/CS Library (http://portal.ct.gov/DASCSLibrary) > 6000 Series.

H. **Application for Payment at Substantial Completion:** Following issuance of the Certificate of Substantial Completion submit an Application for Payment form; use the form as required by the Owner. Present the required information on electronic media printout as applicable that include, but are not limited, to the following:

1. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

2. Administrative actions and submittals that shall precede or coincide with this application include, but are not limited to, the following:

a. Occupancy permits and similar approvals.

b. Warranties (guarantees) and maintenance agreements.

c. Test/adjust/balance records.

d. Maintenance instructions.

e. Meter readings.

f. Startup performance reports.

g. Changeover information related to Owner's occupancy, use, operation, and maintenance.

h. Final cleaning.

i. Application for reduction of retainage and consent of surety.

j. Advice on shifting insurance coverage.

k. List of incomplete Work recognized as exceptions to Architect's Certificate of Substantial Completion.

I. Final Payment Application: Administrative actions and submittals that must precede or coincide with submittal of the final Application for Payment include, but are not limited, to the following:

1. Completion of Project Closeout requirements.

2. Completion of list of items remaining to be completed as indicated on the attachment to the Certificate of Substantial Completion.

3. Ensure that unsettled claims will be settled.

4. Ensure that incomplete Work is not accepted and will be completed in accordance with a schedule prepared by the Contractor which is acceptable to the Owner.

5. Transmittal of required Project construction records to the Owner (including as-built documents specified in Section 01 77 00 "Closeout Procedures").

6. Certified property survey.

7. Proof that taxes, fees, and similar obligations were paid.

8. Removal of temporary facilities and services.

9. Removal of surplus materials, rubbish, and similar elements (Reference Section 01 74 19 "Construction Waste Management & Disposal").

10. Change of door locks to Owner's access.

11. The requirements of the General Conditions and Supplementary Conditions for Final Acceptance, Final Completion, Final Inspection, and Final Payment.

12. Asbestos, lead or other hazardous material manifests.

13. Completion of "Building Contractor Reporting Form" as supplied by Department of Construction Services, for all Contractors, Subcontractors, Vendors, Suppliers, etc. who work on the Contract. The form includes the following information:

a. Contractor/Subcontractor name.

b. FEIN/Social Security Numbers

c. Connecticut Tax Registration Numbers

d. Type of work

e. Name of business and address

f. Remittance address.

PART 2 - PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - PART 3 - EXECUTION (NOT APPLICABLE)

END OF SECTION 01 29 76

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ADDENDUM 2, Item 3

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The Construction Documents, consisting of Drawings, Specifications, and general provisions of the Contract, including Division 00 General and Supplementary Conditions and other Division 01 Specification Sections, are complimentary; they include and apply to this Section

1.2 SUMMARY

A. This Section includes administrative and supervisory requirements necessary for coordinating construction operations including, but not necessarily limited to, the following:

1. General project coordination procedures.

2. Conservation.

3. Coordination Drawings, including Site Logistics Plans.

4. Administrative and supervisory personnel.

5. Cleaning and protection.

B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division Section 01 11 00 “Summary of Work” 1.10 Miscellaneous Provisions, (D) Site Logistics Plans.

2. Division 01 Section 01 29 76 “Progress Payment Procedures” for Schedule of Values items

3. Division 01 Section 01 31 16 “Coordination Drawings Procedure” for requirements applicable to coordination drawings.

4. Division 01 Section 01 31 19 "Project Meetings" for progress meetings, coordination meetings, and pre-installation conferences.

5. Division 01 Section 01 32 16.13 "CPM Schedules" for requirements for CPM scheduling and reporting progress of work.

6. Division 01 Section 01 50 00 "Temporary Facilities and Controls- ".

7. Division 01 Section 01 60 00 "Product Requirements – " for coordinating general installation.

8. Division 01 Section 01 71 23 "Field Engineering – " specifies procedures for field engineering services, including establishment of benchmarks and control points.

9. Division 01 Section 01 74 13 ‘Project Cleanliness” for project housekeeping requirements.

10. Division 01 Section 01 77 00 "Closeout Procedures" for coordinating contract closeout.

1.3 CONSTRUCTION ADMINISTRATOR

A. The Construction Administrator is identified in Division 01 Section 01 11 00 "Summary of Work".

B. Construction Mobilization:

1. Cooperate with the Architect and CT DCS PM in the allocation of mobilization areas of the site, for field offices and sheds, for agency facility access, traffic, and parking facilities.

2. During Construction, coordinate use of site and facilities through the Architect and CT DCS PM.

3. Comply with Architect and CT DCS PM procedures for intra-project communications; submittals, reports and records, schedules, coordination drawings, and recommendations; and resolution of ambiguities and conflicts.

4. Comply with instructions of the Architect and CT DCS PM for use of temporary utilities and construction facilities.

5. Coordinate field engineering layout for work under the instructions of the Architect and CT DCS PM.

1.4 COORDINATION

A. Coordinate construction operations included in various Sections of these Specifications to assure efficient and orderly installation of each part of the Work. Coordinate construction operations included under different Sections that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in the sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.

2. Coordinate installation of different components to assure maximum accessibility for required maintenance, service, and repair.

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

B. Where necessary, prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and attendance at meetings.

1. Prepare similar memoranda for the Contractor, Owner and separate contractors where coordination of their work is required.

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

1. Preparation of schedules.

2. 2nstallation and removal of temporary facilities.

3. Delivery and processing of submittals.

4. Progress meetings.

5. Project closeout activities.

6. As-Builts coordinate monthly meetings to assure up-dates being performed

1.5 SUBMITTALS

A. Coordination Drawings: Prepare coordination drawings to complete detailed coordination of systems and components and to integrate information about fabrication and installation.

1. Thoroughly prepare coordination drawings, as stipulated in Section 01 31 16 “Coordination Drawings Procedure”, reviewing all contract documents and consulting with all entities contributing to or involved with each portion of the work under consideration.

a. Show the relationship of all components shown on any separate Shop Drawings.

b. Indicate required desired installation sequences.

c. Comply with requirements contained in Division 01 Section 01 33 00 "Submittal Procedures".

2. Prepare coordination drawings for installation of all products and materials fabricated by separate entities.

3. Prepare coordination drawings where limited space availability necessitates maximum utilization of space for efficient installation of different components, including but not limited to: all site-utility entry points; all ceiling and roof cavities in all areas; all electrical, telecommunications and mechanical rooms; all stage-boundary interface areas; all laboratories, animal-handling rooms and data rooms; all classrooms and seminar rooms; all lecture halls and their support spaces; all video studios, broadcast classrooms and their support facilities; and all such other conditions required to coordinate the work.

4. Prepare a Site Logistics Plan(s) showing: The entire project area and limits; all routes into and out of site; all staging and stockpiling and lay-down areas; all aspects of phasing/staging; all parking, paving and fencing; and all specific provisions to satisfy requirements of Division 01 Sections, including but not limited to Field Engineering and Temporary Facilities and Controls. The Site Logistics Plan shall coincide with and complement the general staging plans and site

plans outlined in the contract bidding documents. It is intended that the Contractor shall present this refined plan for approval by the Construction Administrator. The fencing shown on this plan is required for all phases. Exact placement and timing of installations and removals will be reviewed and approved by the Architect and CT DCS PM prior to implementation. An additional allotment of various fencing is specified in Division 32, which the Contractor shall provide, install, and relocate at various intervals, for installation and removal by the Contractor per the direction of the project's Construction Administrator. This staging and logistics plan will require refinement and change for each phase/stage of the project. The Site Logistics Plan(s) shall be drawn at a scale no smaller than 1"=40' and shall be submitted as stipulated in Division 01 Section 01 29 76 "Progress Payment Procedures", but in no case later than (30) days after Notice to Proceed.

B. Staff Names: Prior to the contract start date, submit a list of the Contractor's principal staff assignments, including the superintendent, project safety officer, and other personnel in attendance at the Project Site. Identify individuals and their duties and responsibilities. List their addresses and telephone numbers.

1. Post copies of the list in the Project meeting room, the temporary field office, and at each temporary telephone.

2. Provide resumes of each staff member proposed for the Project. This shall include the Project Manager, Project Superintendent and Safety Officer.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION

3.1 GENERAL COORDINATION PROVISIONS

A. Inspection of Conditions: Require the Installer of each major component to inspect both the substrate and conditions under which Work is to be performed and coordinate such inspections with the Architect and CT DCS PM and authorities having jurisdictions. If unsatisfactory conditions exist notify the Architect and CT DCS PM immediately. Do not proceed until unsatisfactory conditions have been corrected in an acceptable manner.

B. The Contractor shall coordinate temporary enclosures with required inspections and tests to minimize the necessity of uncovering completed construction for that purpose.

C. Coordination Drawings: Before construction work can begin, the Contractor shall submit coordination drawings prepared in accordance with requirements of Section 01 31 16 "Coordination Drawings Procedure"

D. The Construction Administrator will meet with the Contractor on all major items of coordination.

3.2 CLEANING AND PROTECTION

A. Clean and protect construction in progress and adjoining materials in place, during handling and installation. Apply protective covering, where required, to assure protection from damage or deterioration. Comply with requirements of Section 01 74 13 "Project Cleanliness."

B. Clean and provide maintenance on completed construction as construction per manufacturers requirements through the remainder of the construction period. Adjust and lubricate operable components to assure operability without damaging effects.

C. 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. Where applicable, such exposures include, but are not limited to, the following:

1. Excessive static or dynamic loading.

2. Excessive internal or external pressures.

3. Excessively high or low temperatures.

4. Thermal shock.

5. Excessively high or low humidity.

6. Air contamination or pollution.

7. Water or ice.

8. Solvents.

9. Chemicals.

10. Light.

11. Radiation.

12. Puncture.

13. Abrasion.

14. Heavy traffic.

15. Soiling, staining, and corrosion.

16. Bacteria.

17. Rodent and insect infestation.

18. Combustion.

19. Electrical current.

20. High-speed operation.

21. Improper lubrication.

22. Unusual wear or other misuse.

23. Contact between incompatible materials.

24. Destructive testing.

25. Misalignment.

26. Excessive weathering.

27. Unprotected storage.

28. Improper shipping or handling.

29. Theft.

30. Vandalism.

END OF SECTION 01 31 00

PART 1 - GENERAL

1.1 SCOPE

A. This Section stipulates minimum requirements for limited scope Coordination Drawings.

B. The Coordination Drawings shall commence after the HVAC Contractor's sheet metal shop drawings have been Approved.

1.2 PROCEDURE

A. Upon receipt of the Notice to Proceed, request CAD or Revit files from the Architect through the Contractor. These files are subject to a standard electronic document waiver.

B. The Sheet Metal Contractor shall initiate the composite drawing file of all areas for all the trades in a file format compatible with drawing programs using .DWG format.

1. Layers and line colors shall be selected and designated to render maximum clarity and contrast among each trade.

2. Arrange the paper-space sheet sizes for printing at a scale that presents information legibly. Typically, a 1/4" or 3/8" equal to one foot scale shall be considered minimum, with break lines arranged to accommodate continuity in the systems line work.

C. The originating file shall show proposed ductwork installation in detail including ceiling heights, duct heights, insulation thickness, all registers, and diffusers in the context of building structure.

D. All Trades shall make a dedicated trade-file adding their respective piping, conduits, raceways, control devices, terminal devices, panels and appurtenances .

1. Each trade shall indicate necessary seismic restraints.

E. Files of all trades shall be combined and analyzed for conflicts.

1. Conflicts shall be logged, and all systems reworked until conflicts are reconciled.

2. Resolution of conflicts shall be confirmed in writing and evidenced by a single drawing file with all constituent trade reference files bound as a single composite file.

3. Submit the resolved file for review by the Mechanical and Structural Engineers.

4. Submit the Approved file with copies of the trades' sign-off for Record.

1.3 SCHEDULE

A. Within 15 days of receipt of a Limited Notice to Proceed Trade Contractors shall jointly prepare a detailed coordination drawing schedule in table form.

B. Complete the coordination file in accordance with the Contractor's Project Schedule.

1.4 NON-PERFORMANCE

A. Failure to comply with the substance of this coordination specification will forfeit the rights of the noncompliant trade contractor to make claims for additional compensation arising from circumstances reasonably attributable to coordination failures.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01 31 16

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ADDENDUM 2, Item 3

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements for project meetings, including, but not limited to, the following:

1. **Start Date meeting (establishes start date)**
2. **Pre-construction conferences.**
3. **Pre-installation conferences.**
4. **Progress meetings.**
5. **Safety**
6. **Coordination**
7. **As-built drawings review**
8. **And as required**

B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 01 Section 01 31 00 "Project Management and Coordination" for procedures for coordinating project meetings with other construction activities.
2. Division 01 Section 01 32 16.13 "CPM Schedules" for requirements for CPM scheduling and reporting progress of work.
3. Division 01 Section 01 33 00 "Submittal Procedures" for submitting the Construction Schedule or CPM Schedule.
4. Division 01 Section 01 35 26 “Government Safety Requirements specifies the requirements for safety plans, reports, and investigation submittals.

1.3 PRE-CONSTRUCTION CONFERENCE

A. The Contractor will attend a pre-construction conference before starting construction, as scheduled by the Construction Administrator convenient to the Owner, the Construction Administrator, Architect, and Contractor. This meeting will take place at least **fourteen (14)** days prior to official Start Date. Hold the conference at the Project Site or another convenient location as directed by the Construction Administrator. The Construction Administrator shall conduct the Pre-construction Conference to review the Contractor and Subcontractor responsibilities and personnel assignments.

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

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

1. **Tentative construction schedule.**
2. **Critical work sequencing.**
3. **Progress meeting schedule.**
4. **Designation of responsible personnel.**
5. **Procedures for processing field decisions and Change Orders.**
6. **Procedures for processing Applications for Payment.**
7. **Distribution of Contract Documents.**
8. **Submittal of Shop Drawings, Product Data, and Samples.**
9. **Preparation of record documents.**

10. **Use of the premises.**
11. **Parking availability.**
12. **Office, work, and storage areas.**
13. **Equipment deliveries and priorities.**
14. **Safety procedures.**
15. **First aid.**
16. **Security.**
17. **Housekeeping.**
18. **Working hours.**
19. **Coordination with Audio Visual and Telecommunications.**

1.4 PRE-INSTALLATION/CONSTRUCTION CONFERENCES

A. The Contractor will schedule a pre-installation conference(s) at the Project Site before each construction activity that requires coordination with other construction. The Contractor shall be responsible to notify in writing the Construction Administrator and the appropriate Subcontractor(s), etc., of the date and time of all Pre-installation/Construction Conferences. Notification shall be at least seven (7) days, prior to the Conference. The Contractor shall be responsible for coordination and attendance of all Subcontractors, etc., involved in or affected by the installation for all Pre-installation/Construction Conferences.

B. **Attendees:** The Construction Administrator, Contractor, Subcontractors, Owner and Architect, the installer and representatives of manufacturers and fabricators involved in or affected by the installation, and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. The Contractor shall advise all attendees of the scheduled Pre-installation/Construction Conferences dates.

C. **Agenda:** Review the progress of other construction activities and preparations for the particular activity under consideration at each Pre-installation/Construction Conference, including but not limited to the following requirements:

1. **Contract Documents.**
2. **Options.**
3. **Related Change Orders.**
4. **Purchases.**
5. **Deliveries.**
6. **Shop Drawings, Product Data, and quality-control samples.**
7. **Review of mockups.**
8. **Possible conflicts.**
9. **Compatibility problems.**
10. **Time schedules.**
11. **Weather limitations.**
12. **Manufacturer's recommendations.**
13. **Warranty requirements.**
14. **Compatibility of materials.**
15. **Acceptability of substrates.**
16. **Temporary facilities.**
17. **Space and access limitations.**
18. **Governing regulations.**
19. **Safety.**
20. **Inspecting and testing requirements.**

21. **Required performance results.**
22. **Recording requirements.**
23. **Protection.**

D. The Construction Administrator will record significant discussions and agreements and disagreements of each Pre-installation/Construction Conference, and the approved schedule. The Construction Administrator will promptly distribute the record of the Pre-installation/Construction Conference to all attendees.

E. The Contractor shall not proceed with the installation/construction if the conference cannot be successfully concluded. The Contractor shall be responsible to initiate whatever actions are necessary to resolve impediments to performance of Work and schedule and reconvene another Pre-installation/Construction Conference at the earliest feasible date. Failure of the contractor to resolve impediments to the performance of the work will not result in an extension of days.

1.5 PROGRESS MEETINGS

A. The Construction Administrator will conduct progress meetings at the Project Site or at regular intervals as agreed upon at the Pre-construction Conference. The Construction Administrator will notify the Owner, the Architect, and the Contractor of the scheduled Progress Meeting dates. Coordinate dates of Progress Meetings with preparation of Application for Payment requests.

B. **Attendees:** In addition to representatives of the Contractor, Construction Administrator, Owner and the Architect, subcontractor, supplier, or other entity concerned with current progress or involved in planning, coordination, or performance of future activities may be requested to attend these meetings on an as needed basis. All participants at the meeting shall be familiar with the Project and authorized to conclude matters relating to the Work. The Contractor shall include the site superintendent as a minimum.

C. **Agenda:** Progress Meetings shall review and correct or approve minutes of the previous Progress Meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to the status of the Project.

1. **Construction Schedule or CPM Schedule:** Review progress since the last Progress Meeting. Determine where each activity is in relation to the required Contractor's "Construction Schedule" or "CPM Schedule" and whether each activity is on time or ahead or behind Schedule. Determine how Work that is behind Schedule will be expedited; secure commitments from parties involved to do so. Discuss whether Schedule revisions are required to insure that current and subsequent activities will be completed within the Contract Time.
2. Review the present and future needs of each entity present, including the following:
    a. **Interface requirements.**
    b. **Time.**
    c. **Sequences.**
    d. **Status of submittals.**
    e. **Deliveries.**
    f. **Off-site fabrication problems.**
    g. **Access.**
    h. **Site utilization.**
    i. **Temporary facilities and services.**
    j. **Hours of work.**
    k. **Hazards and risks.**
    l. **Housekeeping.**
    m. **Quality and work standards.**
    n. **Change Orders.**
    o. **Documentation of information for payment requests.**

D. **Reporting:** The Construction Administrator will distribute minutes of the meeting to each party present, promptly and before the next scheduled meeting, and to parties who should have been present.

1.6 SUBCONTRACTOR/COORDINATION/SAFETY MEETINGS

A. The Contractor shall conduct Subcontractor/coordination meetings.

B. The Contractor shall conduct a separate safety meeting after the safety plan is submitted. The Contractor shall take meeting minutes. These minutes shall be made available upon request. The Contractor shall notify the Construction Administrator of the times and dates of these meetings, who may elect to attend these meetings as an observer when necessary. A minimum of one safety meeting will be held per month.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01 31 19

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for the preparation, submittal, and maintenance of the Contractor's computerized progress schedule, reporting progress of the Work, and Contract time adjustments, including the following:

1. Preliminary schedule.

2. Baseline schedule.

3. **Two (2) week** look ahead schedules.

4. Schedule revisions.

5. Recovery schedules.

6. Narratives.

7. Schedule time extensions.

B. The above listed Project schedules shall be used for evaluating all issues related to time for this Contract. The Project schedules shall be updated in accordance with the requirements of this Section to reflect the actual progress of the Work and the Contractor's current plan for the timely completion of the Work. The Project schedules shall be used by the Owner and Contractor for the following purposes as well as any other purpose where the issue of time is relevant:

1. To communicate to the Owner the Contractor's current plan for carrying out the Work;

2. To identify work paths that are critical to the timely completion of the Work;

3. To identify upcoming activities on the Critical Path(s);

4. To evaluate the best course of action for mitigating the impact of unforeseen events;

5. As the basis for analyzing the time impact of changes in the Work.

6. As a reference in determining the cost associated with increases or decreases in the Work;

7. To identify when submittals will be submitted to the Owner;

8. To prioritize the Owner's review of submittals;

9. To document the actual progress of the Work;

10. To evaluate resource requirements of the Contractor and the Owner;

11. To integrate the Work with the operational requirements of the Owner's facilities;

12. To facilitate efforts to complete the Work in a timely manner.

13. To document the history of the Work.

B. Refer to the General Conditions and the Agreement for definitions and specific dates of Contract Time.

C. **Related Sections**: The following Sections contain requirements that relate to this Section:

1. Division 01 Section 01 11 00 "Summary of Work" specifies the scope of work for the various phases, requirements regarding the Contractor's use of premises, occupancy requirements, products ordered in advance, and Owner furnished products.

2. Division 01 Section 01 25 00 "Substitution Procedures" specifies requirements for handling requests for equals and substitutions.

3. Division 01 Section 01 26 00 "Contract Modification Procedures" specifies requirements for handling and processing contract modifications.

4. Division 01 Section 01 29 76 "Progress Payment Procedures" specifies requirements for submitting Schedule of Values and Application for Payments.

5. Division 01 Section 01 31 00 "Project Management and Coordination" specifies requirements for coordinating construction operations.
6. Division 01 Section 01 31 19 "Project Meetings" specifies requirements for submitting and distributing meeting and conference minutes.
7. Division 01 Section 01 33 00 "Submittal Procedures" specifies requirements for submitting the monthly computerized progress schedule.
8. Division 01 Section 01 45 00 "Quality Control" specifies requirements for submitting inspection and test reports.
9. Division 01 Section 01 50 00 "Temporary Facilities and Controls" specifies requirements for temporary utilities, support facilities, and security protection.
10. Division 01 Section 01 60 00 "Product Requirements" specifies requirements for submitting the list of products.
11. Division 01 Section 01 77 00 "Closeout Procedures" specifies requirements for Contract closeout.

1.3 DEFINITIONS

A. Critical Path Method (CPM): A method of planning and scheduling a construction project where activities are arranged based on activity relationships and network calculations determine when activities can be performed and the critical path of the Project.

B. Critical Path: The longest continuous chain of activities through the network at a given data date for the Schedule to a Contract Milestone or Contract Completion. Where the path to a specific Milestone has become negative, the Critical Path shall be the longest continuous chain of activities with the greatest amount of negative float.

C. Near Critical Path: Any continuous series of activities through the network to the Contract Milestone or the Contract Completion Date where the Total Float of the activity at the data date along that path is within **fifteen (15) days** of the Total Float possessed by the activity at the data date along the Critical Path.

D. Network Diagram: A graphic diagram of a network schedule, showing the activities and activity relationships.

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

1. Critical activities are activities on the critical path.
2. Predecessor activity is an activity that must be completed before a given activity can be started.

F. Event: An event is the starting or ending point of an activity.

G. Milestone: A key or critical point in time for reference or measurement.

H. Float: Is the measure of leeway in activity performance. Accumulative float time belongs to the Owner.

1. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the following activity.
2. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned project completion date.

I. Total Float: The number of days from the late finish date (LF) to the early finish date (EF) of an activity at a given data date for the Schedule. When the LF is later than the EF, the Total Float shall be positive. When the LF and the EF are the same, the Total Float shall be zero. When the LF is earlier than the EF, the Total Float shall be negative. Unless otherwise specified all references to "float" shall mean "Total Float."

J. Fragnet: The sequence of new activities and/or activity revisions, logic or resource changes that are proposed to be added to the existing schedule to demonstrate the influence of impacts to the schedule. The Fragnet shall identify the predecessors to the new activities and demonstrate the impacts to successor activities.

1.4 QUALITY ASSURANCE

A. Construction Scheduler:

1. The Contractor is required to employ or retain the services of an individual skilled in construction scheduling ("Construction Scheduler"). For projects with a Contract value greater than five (5) million dollars, the Construction Scheduler shall have at least five (5) years of verifiable experience as the person primarily responsible for preparing and maintaining detailed project schedules on projects of the same or

similar size and nature as this project. The Construction Scheduler is required to attend meetings pertaining to scheduling and progress of the work including all progress meetings.

2. Within **five (5) days** after the Notice of Award, the Contractor shall provide a statement to the Owner with the following:
   - **a.** Identification, qualifications, and experience of the Contractor's Construction Scheduler and all other members of the Contractor's scheduling staff.
   - **b.** References of not less than **two (2)** previous projects on which the Contractor's Construction Scheduler has utilized CPM scheduling.
3. The Owner reserves the right to disapprove any Construction Scheduler candidate proposed for the project and/or remove, without rights to work on the project, any member of the Contractor's scheduling staff that is, in the Owner's opinion, not qualified. In case of disapproval, the Contractor shall resubmit the qualifications and references of the proposed alternate Construction Scheduler within **ten (10) days**. The Contractor must have its Construction Scheduler approved prior to the issuance of the Notice to Proceed and the submission of any schedule.
4. Should the Construction Scheduler leave the employ of the Contractor or be re-assigned or relieved of his/her responsibilities as the Construction Scheduler on the project, the Contractor will be required to submit the qualifications of the proposed replacement Construction Scheduler within **10 days** after the date the former Construction Scheduler is no longer responsible for his/her duties on this Project.

B. Scheduling Software:

1. For Contracts greater than **five (5) million** dollars, the Contractor shall use the latest version of **Primavera Project Planner** as the scheduling software system for use on this Project.
2. ~~The Contractor shall provide one (1) licensed copy of the scheduling software to the Owner's CA for their use, registered in the Owner's name, complete with the entire manufacturer's manual, within **five (5)** days after the Contract award. The software manuals and license shall become the permanent property of the Owner~~.

1.5 CPM SCHEDULE FORMAT/CONTENT

A. Format: All Schedules required by this section shall be computer generated, critical path method (CPM) networks utilizing the precedence diagram method of scheduling.

B. Electronic Schedule Naming: The Contractor shall not submit any two (2) schedule files with the same file name. File names shall be in accordance with the following requirements:

1. Proposed/Final Preliminary Schedules shall be named P001, P002, P003, etc.
2. Proposed/Final Baseline Schedules shall be named B001, B002, B003, etc.
3. Final Updated Schedules shall be named U001, U002, U003, etc. Any revisions that are required at a particular update on a data date shall be numbered UA01, UB01, UC01, etc.

C. Activity Identification: Each activity in the Project schedules shall have an activity Identifier (activity ID). The Contractor is encouraged to utilize the activity ID to contain a structure enabling easy identification of work type, location, subcontractor, etc. The activity ID of an existing activity shall not be modified or assigned to another activity.

D. Activity Description: The activity description shall identify the scope of the activity and shall include a verb or work function (i.e. form, pour, execute, etc.), an object (i.e. slab, footing, wall, etc.), and location (i.e., first floor, roof, etc.). There shall not be any two activities with the same activity description. It shall not be necessary to investigate activity code assignments or logic relationships to identify the scope of an activity. For example, the description "Pour Footing" will not be acceptable. The description "Pour Footing West Wall, Section 2" will be acceptable. The terms "Miscellaneous," "Misc." and other vague adjectives shall not be used in an activity description. The Contractor shall standardize the use of terms and their spelling in all activity descriptions. Abbreviation used in activity descriptions shall be consistent with the abbreviations used throughout the Contract Documents and summarized on the Contract Drawings.

E. Work Activities: The Contractor shall include activities for work in the following list:

1. Mobilization.
2. All required submittals and submittal review.
3. Equipment and materials procurement/fabrication/delivery.
4. Installing/operating temporary heat and utilities.

5. Preliminary testing of equipment, instrumentation and controls.
6. Final testing, including preparation time.
7. Substantial Completion: Substantial completion activity shall meet all requirements set forth in Division 01 Section 01 77 00 "Closeout Procedures".
8. Punch list work.
9. Operation and maintenance training.
10. Demobilization.
11. Final cleaning.
12. Issuance of Certificate of Occupancy.
13. Project Specific Issues (If Warranted).

F. Maximum Activity Durations: The Contractor shall prepare schedule utilizing activity durations in terms of days. Do not exceed **twenty-one (21)** day duration on activities except concrete curing, submittal review and equipment fabrication and deliveries. Where duration of continuous work exceeds **twenty-one (21)** days, subdivide activities by location or other sub-element of the work. At the request of the Owner, the Contractor shall substantiate the need for specific activities having longer durations than stated herein. If the Contractor fails to substantiate this need, then the Contractor shall modify activity durations and the corresponding work scope of the activities to the satisfaction of the Owner.

G. Activity Dates: Early and late start and finish dates of activities shall be calculated for each activity based upon the schedule data date, actual dates, schedule logic, schedule constraints, calendars and original duration or remaining duration, in accordance with the software to calculate incorrect early and late, start and finish dates, the Contractor shall be responsible to identify all such errors and to determine correct dates consistent with the parameters specified in this Section.

H. Activity Predecessors and Successors: Every activity shall have logically assigned predecessors and successors in conformance with the requirements of this Section. Unless otherwise specified, Notice to Proceed shall be the only activity in the Project Schedules without a predecessor. Unless otherwise specified, Acceptance and each Contract Milestone(s) shall be the only activity in the Project Schedules without a successor.

I. Activity Constraints: Activity Constraints can affect activity float calculations and shall not be used unless accepted by the Owner. The imposition of a date constraint on any activity shall only be permitted when the Contractor demonstrates the need for such a constraint to the satisfaction of the Owner.

J. Imposed Project Finish Date: The imposed project finish date shall be the Contract Completion date, or if the Contractor plans an early completion date, the date it plans to complete the Work.

K. Negative Float: Negative float is calculated when the user imposes a finish date or other constraint on the schedule and when an activity can only finish after its late finish date. The Contractor shall remove the imposed finish date and/or constraint causing the negative float when directed to do so by the Owner.

L. Activity Codes: The schedules shall contain activity code classifications and code values. The coding structure shall, at a minimum, include code fields for the following: Phase, Area, Location, Type of Work, Submittal/Procurement, Construction, Responsibility, Original/Extra Work, and **Division. All activities in the schedule must have non-blank values for the required codes.**

M. Calendars: The planning unit for the Work shall be days. The global calendar shall contain all union holidays. The Contractor shall coordinate holidays to be observed with the Owner and incorporate them into the schedule as non-working days. This Calendar shall be a **5-day** work week, Monday through Friday. Every activity shall be assigned a working day calendar based on when the activity is planned to occur and when it is contractually permitted to occur. The Contractor shall define and submit additional working day calendars for acceptance by the Owner that are necessary for completion of work in accordance with the requirements of the Contract Documents. Only Owner defined or Owner accepted working day calendars shall be utilized in the Project Schedules.

N. Logic: The Contractor shall be responsible for developing the logic of the Preliminary, Baseline and Recovery Schedules and for updating that logic each month to accurately reflect the progress of the Work to-date and the Contractor's current plan for the timely completion of the Work.

1. The following criteria shall form the basis for assembly of the schedule logic:
   a. Which activity must be completed before a subsequent activity can be started?
   b. Which activities can be done concurrently?

c. Which activities must be started immediately following a completed activity?

d. What major economic facility or manpower restrictions are required for sequencing these activities?

2. All paths through the Project schedules shall proceed in the direction representing the progression of time. Activity lag duration shall not have a negative value unless the Contractor substantiates to the satisfaction of the Owner that this is the best representation of reality. The use of activity lags shall be kept to a minimum. The Contractor shall eliminate lags by creating new activities, when the creation of new activities will perform the same function of the lag and when requested to do so by the Owner.

3. Redundant ties to preceding activities in a sequential series of activities will not be permitted. For example, if activity C is the successor in a finish-start relationship to activity B, and activity B is the successor in a finish-start relationship to activity A, then activity A shall not have a redundant finish-start relationship to activity C. A tie representing a different constraint will not be considered redundant. For example, a logic tie showing that the completion of the work scope of a predecessor is required before the successor can start is different from a logic tie representing a resource limitation and will not be considered redundant.

4. The Contractor is required to use manpower and equipment restraints, separately noted, to optimize and level manpower and equipment requirements. Such resource leveling shall reflect a reasonable plan for accomplishing the Work. The individual activities involved may be sequenced within the limits of the available Total Float. However, when this leveling technique is used in establishing the initial schedule, it shall be reflected in the logic with restraints identified as "restraint for manpower or equipment leveling purposes only." Critical or near Critical Paths resulting from the use of manpower restraints shall be kept to a minimum.

5. All activities with resource restraints shall be supplemented with resource loading information as noted in Paragraph G.

6. The Contractor shall correct all incorrect logic relationships in the Schedule Updates to eliminate any out-of-sequenced logic. The Contractor shall make all changes in the logic or other adjustments found to be incorrect by the Owner.

O. Progress Data: Actual start and finish dates shall not be automatically updated by default mechanisms that may be included in the CPM scheduling software systems. The primary source of actual starts and finishes and period percentage completes shall be by field verification. The Contractor is to insure that progress is based of a current estimate of remaining duration to complete the Work and not the activity percent complete which calculates the remaining duration based on the original estimated duration.

P. Submittals:

1. Each submission that is required by the Contract Documents shall have a corresponding activity, for the preparation and review and approval at the submission. When the Contractor plans on making a submission in parts, each part of the submission shall have corresponding preparation and review and approval activities.

2. The timing, sequencing and duration of all submitted review and approval activities shall be in accordance with the Contract Documents.

3. All submissions designated "Revise and Resubmit" shall require that the Contractor insert new submittal preparation and review and approved activities with appropriate logic into the schedule.

4. When submittal receives a partial approval and the partial approval is sufficient to enable the commencement of a successor activity, then the original submittal activity shall be broken down into multiple activities as necessary to accurately reflect the logic of the Contractor's current plan.

5. When multiple items are included in a single submittal, the "Review and Approve" activity for the submittal shall be a predecessor to every activity representing the fabrication and delivery of any of the materials.

Q. Delivery Activities: The schedules shall include activities for all fabrication and delivery work except for short lead time items. "Short lead time" shall be defined as a period of fourteen (14) days or less from placement of order to delivery of material to the project site. Activities representing the delivery of materials or equipment for more than **one (1)** installation activity will permitted in accordance with the following conditions.

1. The material delivery activity shall be a predecessor to the first activity representing the installation of the material in each area.

2. When partial deliveries are received and those deliveries are adequate to enable the commencement of some, but not all, successor activities, then the original delivery activity shall be broken down into multiple activities as necessary to accurately reflect the logic of the Contractor's current plan.

R. Inspections/Testing: The Contractor shall include an activity for each inspection and test required by the various officials and agencies, including the Building Inspector, and Fire Marshall. The Contractor shall schedule these activities in accordance with the availability of the corresponding agency/official.

S. Progress Override/Retained Logic: The Contractor shall use retained logic to calculate all schedules required by this section. The use of progress override is not allowed without prior approval of the Owner.

T. Weather Days Allowance: The Contractor shall include as a separate identifiable activity on the Critical Path, and activity labeled "Weather Days Allowance." Insert this activity immediately prior to the substantial completion milestone.

1. The Contractor shall be fully responsible for determining the number of weather delay days to be included in the CPM Schedule. This determination shall be based on the normal anticipated weather for the project location and the nature of the project work. The CPM Schedule shall be based on the contractor's determined weather delay allowance, immediately prior to the Substantial Completion milestone.

2. The minimal allowed duration of the Weather Days Allowance shall be calculated as follows (decimals rounded to nearest whole number):

$$\frac{\textbf{Contract Time } \textit{(Calendar Days)}}{\textbf{365}} \textbf{ multiplied by } \textbf{7} \textbf{ equals } \textbf{Weather Days Allowance } \textit{(Calendar Days)}$$

3. The Contractor shall insert an activity in the Critical Path to reflect weather day occurrences when weather days are experienced and accepted by the Owner. Identify this activity as a weather delay.

4. The Contractor shall reduce duration of Weather Days Allowance activity as weather delays are experienced and inserted into the schedule. Remaining weather days in Weather Day Allowance at completion of project is considered float. Weather delay, when justified, are considered allowable, non compensable.

U. Regulatory/Third Party Approvals: The Contractor shall include activities in its schedule for all approvals required by regulatory agencies or other third parties.

V. Resource Loading: The Contractor shall resource load the schedules when required by this Specification and/or if requested to do so by the Owner. When required, the schedules shall be resource loaded for both the Contractor and all of its subcontractors as detailed below or as otherwise directed by the Owner. The Contractor may propose additional or alternative resource loading for the Owner review and acceptance. Defining a resource shall consist of identifying the resource name, resource description, unit of measure, and calendar assignment.

1. **Labor Resources:** Labor shall refer to all craft labor including foreman. Labor shall be measured in person-days. The labor resource definitions shall be consistent with the subcontractor work scope.

2. **Construction Equipment Resources:** The planned use of equipment requiring a licensed operator shall be reflected in equipment resource assignments to activities.

3. **Limits on Resources:** The Contractor shall indicate in its Narrative the expected amount of resource and shall define the normal or expected usage along with a maximum limit available to the Contractor. Resource limits may vary for different stages of the work. Resource limits shall be revised to reflect the Contractor's current plan for the timely completion of the work.

W. Activity Logs:

1. Activities that are modified or added by change order shall be identified in the activity log. The change order number, as issued by the Owner, and the date the activity was modified or added shall be clearly recorded.

2. Activities affected by logic changes, resource changes, duration changes and calendar changes shall be identified in the activity log. The date the activity was modified, the nature of the change and the reason for the change shall be clearly recorded.

1.6 PRELIMINARY SCHEDULE AND PRELIMINARY SCHEDULE UPDATES

A. For projects with a construction cost estimate over five (5) million dollars, the Contractor shall submit a Preliminary Schedule and Preliminary Schedule Updates. The Notice to Proceed will not be issued and the Contractor will not be allowed to start work at the Project site until the Preliminary Schedule has been submitted and accepted.

B. The Preliminary Schedule shall contain a detailed plan of operations for the first 90 days of Work after receipt of the Notice to Proceed.

C. The Construction Administrator and Contractor shall meet after receipt of Preliminary Schedule to review and make necessary adjustments. Contractor shall submit a revise Preliminary Schedule incorporating the adjustments with **five (5) days** after meeting.

D. All Work contemplated beyond the first **ninety (90) days** shall be shown in sufficient detail such that the Critical Path and all Contract Milestones may be identified.

E. The Preliminary Schedule shall be updated monthly during first **ninety (90) days** after issuance of the Notice to Proceed. The first update of the Preliminary Schedule shall show the progress on the actual Notice to Proceed date and shall be submitted to the Construction Administrator within **five (5) days** after the issuance of the Notice to Proceed. Subsequent updates shall show the progress through the last day of the month and shall be submitted to the Construction Administrator by the fifth business day of each month.

F. Preliminary Schedule Update revisions that are required as a result of review comments by the Construction Administrator shall be submitted within **five (5) days** of the Contractor's receipt of the Construction Administrator's comments. The data date of the revised Preliminary Schedule Update shall remain on the first day of the month.

G. The Contractor shall not be permitted to make any schedule revisions (besides progress) to the Preliminary Schedule Update unless approved by the Construction Administrator. When schedule revisions are required, the Contractor shall submit a Schedule Revision per Article 1.11.

1.7 BASELINE SCHEDULE

A. For projects with a construction cost estimate over five (5) million dollars, the Contractor shall submit the proposed Baseline Schedule to the Construction Administrator for all the work of the project within forty-**five (45) days** after issuance of the Notice to Proceed. The Accepted Preliminary Schedule shall be incorporated unchanged, as first **ninety (90) days** activity in the Contractor's Baseline Schedule.

B. The proposed Baseline Schedule shall show sequence and interdependence of all activities required for complete performance of all Work, beginning with date of Notice to Proceed and concluding with date of final completion of the Contract. The Baseline Schedule shall depict the work as bid and as planned as of the Notice to Proceed. The data date shall be the actual date of the Notice to Proceed.

C. The Construction Administrator and the Contractor shall meet after the Construction Administrator's receipt of the Baseline Schedule to review and make necessary adjustments. Should adjustments be required, the Contractor shall submit a revised Baseline Schedule within five (5) days after the meeting and receipt of the Construction Administrator's comments. Subsequent follow-up meetings and resubmissions may continue until the Construction Administrator accepts the Baseline Schedule.

D. The Contractor shall require each major Trade Contractor and major supplier to submit in writing a statement certifying that the major Trade Contractor or major supplier has concurred with the Contractor's Baseline Schedule, the major Trade Contractor's or major supplier's related schedule has been incorporated accurately, including the duration of activities and crew allocations. The definition of a "major Trade Contractor" is **one (1)** that provides services valued in excess of **five (5) percent** of the Contract value. The definition of "major supplier" is **one (1)** that provides material(s) or services valued in excess of **one (1) percent** of the Contract value. Failure of the Contractor to provide the required information will delay the approval of the Baseline Schedule.

1.8 SCHEDULE UPDATES

A. The Contractor shall update and progress the CPM Schedule through the last day of each month (the Data Date is the first day of the month). Updating and progressing the CPM Schedule shall be completed and submitted by the fifth business day each month. Except as otherwise authorized by the Construction Administrator, monthly submissions received after the due date are considered late.

B. The first update will consist of the approved Baseline Schedule updated as of the first day of the first month which starts after **ninety (90) days** from the Notice to Proceed. Subsequent monthly Schedule Updates will be the previous month's approved Schedule Update or approved Revision Schedule updated to reflect progress over the last month. Schedule revisions, apart from updating the status of the remaining durations and percent completes of the various work activities will not be permitted in the Schedule Update.

C. The Contractor shall create a copy of the previous month Schedule Update for the purpose of updating and progressing it. The schedule shall be updated to show the work actually accomplished during the preceding month, the actual time consumed for each activity, and the estimated time remaining for any activity that has been started but not completed. The updating of the percent complete and the remaining duration of any activity shall be independent functions; program features that calculate one of these parameters from the other shall be disabled.

D. The Contractor shall make the necessary adjustments to the Schedule Update in accordance with the Construction Administrator's Schedule Update review comments and shall re-submit the Schedule Update within **five (5) days** after receipt of those comments.

E. The Contractor shall prepare the monthly Schedule Updates every month starting on the month described above through the actual substantial completion date.

1.9 TWO-WEEK LOOK AHEAD SCHEDULES

A. The Contractor shall be required to produce and submit to the Construction Administrator a Two-Week Look Ahead Schedule, to be updated and submitted the first day of each week. Except as otherwise authorized by the Owner, submissions received after the due date are considered late.

B. The Two-Week Look Ahead Schedule may be a CPM schedule or a bar chart; it shall be consistent with the previously approved Schedule Update or approved Schedule Revision.

1.10 SCHEDULE REVISIONS

A. If, at any time, the Contractor alters its logic, original durations, or descriptions, adds activities or activity codes, or in any way modifies the accepted Preliminary Schedule, accepted Preliminary Schedule Update, Baseline Schedule or Schedule Update, the Contractor must notify the Construction Administrator of the change(s), in writing and submit a Revision Schedule to the Construction Administrator for review.

B. The preparation and submission of Revision Schedules will also be required to reflect any Contract Modifications that were approved and Construction Change Directives that were issued during the preceding period and any extra or changed work that the Contractor has started during the preceding period.

C. With each Revision Schedule, the Contractor shall submit a written narrative explaining the nature of the change(s), the schedule, the reason for the change(s) and the impact on the schedule as a result of the change(s).

D. All changes (i.e. duration changes, logic changes, new logic, new or modified activities changes in work sequence, etc.) shall be recorded and a note added to the activity log. The record shall include at a minimum, the date and the reason for the change, and description of the change.

E. The required Revisions Schedules and Narratives are in addition to the regular Schedule Update. They shall be separate submittals and shall be noted as Schedule Revisions.

F. Proposed Revision Schedules shall be submitted by the fifth day of the month and shall reflect status as of the first day of the month.

G. The Construction Administrator and Contractor shall meet after the Construction Administrator's receipt of the Revision Schedule and Narrative to review and make necessary adjustments. Should adjustments be required, the Contractor shall submit a revised Revision Schedule to the Construction Administrator within **five (5) days** after the meeting and receipt of the Construction Administrator Comments. Subsequent follow-up meetings and resubmissions may continue until after the Construction Administrator accepts the Revision Schedule.

H. Only upon acceptance of a revision to the Schedule by the Construction Administrator shall the revision be reflected in the next Schedule Update and Two-Week Look-Ahead Schedule.

I. The Construction Administrator reserves the right to accept or reject any schedule revisions proposed by the Contractor.

1.11 RECOVERY SCHEDULES

A. If, in opinion of the Owner, a Schedule Update indicates that the Contractor has fallen behind schedule, or that a revision in sequence or operations may be necessary for any other reason, the Contractor shall within **seven (7) days** of receiving a written request to perform "Recovery" from the Construction Administrator, immediately institute all necessary steps to improve his progress and shall submit such revised network diagrams, tabulations, operational plans and any supplementary information, as may be deemed necessary by the Owner, to demonstrate the manner in which an acceptance rate of progress will be regained.

B. Should the Contractor's "Recovery" efforts not demonstrate an ability to regain an acceptable rate of progress, the Construction Administrator may require the development of a "Recovery Schedule" and the Contractor shall submit the Recovery Schedule within **twenty-one (21)** days of receiving a written request for the Recovery Schedule from the Construction Administrator. The Recovery Schedule is to be supplemented with resource allocations for every task activity and include time-scaled resource histograms. The resource allocations shall be shown to a level of detail that facilitates report generations based on labor crafts and

equipment classes for the Contractor and Trade Contractors. The Contractor shall use average composite crews to display the labor loading of onsite construction activities. The Contractor shall optimize and level labor to reflect a reasonable plan for accomplishing the Work of the Contract and to assure that resources are not over allocated in multiple concurrent activities. The time-scaled resource histograms shall show labor crafts and equipment classes to be utilized on the Contract.

C. In addition to required submittals, the "Recovery Schedule" submission will also include a Narrative as detailed herein, a time-scaled resource histogram and a Monthly Resources Loading Summary Report (tabular) indicating the peak number of resources required for each activity.

D. The Construction Administrator shall be the sole judge as to whether the Recovery Schedule is sufficiently detailed. Upon acceptance of this Recovery Schedule, it shall form the basis of the new Monthly Schedule Updates going forward.

E. No additional compensation will be allowed for Recovery Schedules required to overcome delays caused in whole or in part by the Contractor.

1.12 NARRATIVES

A. The Contractor shall prepare and submit a Narrative to accompany the Baseline Schedule, Preliminary Schedule and each Preliminary Schedule Update and Monthly Schedule Update. The Narratives shall include:

1. Identification of the update period, the data date and the schedule file name.

2. A description of the current Critical and Near Critical Paths activities that are supposed to start or to be worked on over the coming month.

3. Changes to the Critical Path, intermediate and completion Milestones

4. Description of problem areas.

5. Current or anticipated delays:

a. Cause of delay.

b. Impact of delay on other activities, Milestones, and completion dates.

c. Corrective action and schedule adjustments to correct the delay.

6. A discussion of work completed during the period.

7. A comparison of the planned versus schedule progress early on and near Critical Path activities that were to have been worked on over the last month.

8. A description of any interdependencies between the Contractor's Schedule and any work by other contractors, third parties, and/or the Owner and its representatives.

9. A description of the current status of float created by any previous or ongoing compensable or excusable delays, whether or not the Contractor has utilized any of this float over the last period by purposefully slowing down (pacing) and any request to utilize this float over the coming period.

10. An explanation of how adverse weather has been addressed in Schedule and an accounting of the Weather Day Allowance delineating the activities incorporated into the Schedule to account of work days lost due to weather and the resultant decrease in the duration of the Weather Day Allowance.

11. A description of planned labor resources to be utilized to complete critical and near Critical Path work as requested by the Construction Administrator.

12. A description of actual and potential equipment resource limitations.

1.13 NETWORK FILES, GRAPHICAL OUTPUT AND REPORTS

A. With each Preliminary Schedule, Preliminary Schedule Update, Baseline Schedule, Schedule Update, Revision Schedule and Recovery Schedule required by these specifications, the Contractor shall submit to the Construction Administrator the following schedule reports/graphics/files:

1. **Three (3)** compact disc sets that each include:

a. A compressed back up of the entire schedule.

b. Gantt charts in Adobe Acrobat PDF file format, formatted to fit ANSI Size D paper (610mm x 914mm) (24" x 36"), and showing the Activity ID, Activity Description, Original Duration, Remaining Duration, Total Float, Early Start and Finish Dates, and Calendar ID. Types of Gantt Charts to be included are:

i. The project critical (longest) path.

ii. The Project near Critical Path (excluding Critical Path activities).

iii. All uncompleted work activities as of the data date.

2. Reports in Adobe Acrobat PDF file format, formatted to fit 216mm x 279mm (8½" x 11") size paper, to include:

a. A listing of all activities, by activity code, with early & late starts and Total Float.

b. A Claim Digger Report that details all changes between the current schedule submittal and the previous month's update submittal.

c. Detailed Predecessor/Successor Report which included a listing of all activities that immediately precede and immediately succeed that activity in the schedule logic.

3. **Three (3)** paper copies of each Gantt Charts in color and report on the paper size specified above.

B. Schedule submittals will only be considered complete when all materials have been submitted.

1.14 FLOAT/CRITICAL PATH

A. With the exception of the Float described in Paragraphs B and C, Float is not for the exclusive use or benefit of either the Construction Administrator or the Contractor but is an expiring resource available to all parties acting in good faith as needed to meet any Contract Milestone(s).

B. As float is an expiring resource, if the Work is delayed on the Critical Path due to an excusable delay (either compensable or non-compensable) or by any delay for which responsibility has not yet been agreed upon, the Contractor may not use any float created by such delay on any other path without the express written approval of the Construction Administrator or unless at the time of the float consumption a time extension had been issued for the delay that created the float being consumed. Use of such float on any parallel path without the approval of the Construction Administrator shall be construed as a concurrent inexcusable delay to any delay caused by the Construction Administrator.

C. It is acknowledged and agreed by the Contractor that Construction Administrator caused delays on the project may be offset by Construction Administrator caused time savings (including, but not limited to: Critical Path submittals returned in less time than allowed for in the Contract, approval of substitution requests which result in a savings of time along the Critical Path for the Contractor, etc.). In such an event, the Contractor shall not be entitled to receive an extension of time or delay damages until the Construction Administrator caused time savings are exceeded and the Contract completion date also exceeded.

1.15 EARLY COMPLETION

A. Should Contractor submit a Preliminary Schedule, Baseline Schedule, Schedule Update or Schedule Revision showing Project Completion more than **twenty (28) days** prior to Contract Completion Date, the Construction Administrator may issue a Change Order, at no cost to Owner, revising the time of performance of Work and Contract completion date to match Contractor's schedule. Contract Milestone dates, if any, shall be adjusted accordingly. The assessment of liquidated damages shall be measured based on the new Milestone and Contract completion dates.

B. Should any monthly Schedule Update show the project completion earlier than current Contract completion date, the Contractor shall show early completion time as schedule activity, identified as "Project Float." This float shall be available for use by either party as per the provisions of Article 1.14. The Owner shall not liable for any damages as a result of utilizing this float.

1.16 CONTRACT TIME EXTENSIONS

A. Mitigation of Delays:

1. The Contractor shall be responsible to develop mitigation measures for all delays regardless of responsibility for the delays and to identify all time and cost impacts to the work associated with those mitigation measures. Unless circumstances otherwise require, the Contractor shall not pursue mitigation action for which it expects the Owner to be liable prior to notifying the Owner and receiving Construction Administrator authorization to proceed with the mitigation action. Any action taken by the Contractor prior to receiving approval from the Construction Administrator shall be at the Contractor's risk.

2. When the need for mitigation arises to ensure timely completion, the Contractor shall review all uncompleted activities on the Critical and Near Critical Paths to the Contract Completion Date for errors

in scope, duration, and logic and for the feasibility of performing in parallel work currently scheduled sequentially.

3. Whenever it is possible for the Contractor to mitigate delay without added cost, the Contractor shall do so. The Contractor shall mitigate all delays as efficiently and economically as possible, with the objective of minimizing both the time and cost impact of the delay regardless of responsibility for the delay. The Owner will not be liable for damages which the Contractor could have avoided by reasonable means such as prudent scheduling of the work and judicious handling of forces, equipment or plant. The Owner will not be liable for damages incurred by the Contractor during any period of time when the Contractor has failed to provide notification of delay in accordance with the Contract requirements when having the notification at the specified time could have influenced the Owner's decision or actions.

B. Time Impact Analysis:

1. If the Contractor believes that a proposed change will impact the Project Completion Date or interim Milestones, the Contractor shall submit an analysis with its Change Order Proposal demonstrating the delay to the Critical Path. This analysis shall be in the form of a Time Impact Analysis (TIA).

2. The Time Impact Analysis shall consist of: 1) a Fragnet of the portion of the schedule that will be affected by the incorporation of the change, which shall include the new activities, revised logic and durations associated with the proposal change; 2) a narrative explanation of how the proposed change would impact the schedule; 3) an impact schedule which shall be developed by incorporating the Fragnet and required changes, including any delay mitigation measures, into the most recent accepted schedule update and; 4) electronic copies of the Fragnet and impact schedule.

3. The Contractor shall submit its TIA in sufficient time to allow it to be incorporated into a Revision Schedule prior to the change order work proceeding, allowing the Owner **thirty (30)** days after receipt of the TIA and all the supporting information required with the Change Order Proposal to approve or reject the analysis.

4. Upon agreement on the schedule impact due to the proposed change and the issuance of a time extension, the Contractor shall incorporate the agreed upon Fragnet/schedule revisions in the next monthly update.

5. The Owner reserves the right to have the Contractor proceed with the change order related work without agreeing on the time associated with it and to measure the actual schedule impact via Contemporaneous Period Analysis.

6. In cases where the Contractor has not submitted a TIA with its Change Order Proposal for a particular proposed change, the Contractor agrees that the particular proposed change has no impact on the Contract Completion Date or interim Milestones and no time extension is required.

C. Contemporaneous Period Analysis:

1. When an accepted Schedule Update indicates the project has been delayed beyond the current Contract Completion Date and the Contractor believes it is entitled to an extension of time, the Contractor shall prepare and submit to the Owner a Contemporaneous Period Analysis (CPA) demonstrating the delay(s) to the Critical Path at the time of the delay, mitigation measures taken or proposed by the Contractor and request an extension of time.

2. The Contractor's CPA and time extension request shall be submitted prior to the submission of the next Schedule Update.

3. The request shall indicate the amount of time requested, the period when the delay was experienced and an explanation as to the cause of the delay.

4. The CPA shall quantify the delay by comparing the completion dates and Milestone dates on an update by update basis, starting with the update just prior to the delaying event and ending with the update just after the conclusion of the delaying event. Only the accepted schedules/Schedule Updates shall be used in the CPA. The CPA shall determine the cause of the delay by correlating slippage with various unforeseen events.

5. The CPA will consist of: 1) an update by update accounting of all delay(s) during the period in question; 2) an update by update narrative explanation of how the delay(s) affected the completion date or would have affected the completion date but for other concurrent delay(s); 3) chronologies of the issues affecting the schedule period in question; and 4) a day by day accounting and description of the unanticipated work/work stoppage on the Critical Path and/or path in question; 5) a Gantt chart comparing the as-planned schedule just prior to the start of the delay to the actual as-built for the path(s) in question.

D. The Owner may require the Contractor to correct errors in its TIA or CPA at anytime, whether or not the schedules have been accepted and/or time extension issued and agreed upon. Should the errors affect the outcome of the TIA or CPA, the Owner reserves the right to adjust the time extension accordingly. Generally, a schedule will be found to be in error if it does not properly reflect the sequencing, timing and durations of all the work and required events as well as mitigation efforts contemplated or which should have been contemplated at the time of the data date of the schedule.

E. Time Extensions will be granted only to the extent that equitable adjustments for the activity or activities affected exceed or exceeded the total or remaining float along the Critical path or activities at the time of the actual delay. Actual delays in activities which do not affect the Critical Path work or which do not move the Contractor's planned completion date beyond the Contract completion date or current completion date as affected by previous delays, will not be the basis for an adjustment to the Contract time. Time Extensions shall not be granted until a delay occurs that is:

1. Beyond control of and without fault of or negligence of the Contractor and the major Trade Contractors or Suppliers at any time.

2. Extends the actual performance of the work beyond the Contract completion date or other specified Interim Milestones.

E. Should a non-compensable excusable delay be concurrent with one or more compensable delays, the Contractor and Owner agree that the net result is a non-compensable, excusable delay to the extent the delay is caused by the non-compensable event.

F. The Contractor shall have no claim for damages of any kind, or extensions or increase to the Contract time(s) or Contract Milestone(s), or adjustments of Contract Price on account of any delay, interruption or suspension of the Work or any portion thereof (herein after collectively referred to as "Delay"), due to whatever cause unless the prerequisites of this Subsection are met. The requirements of this Subsection are in addition to and not in lieu of the requirements of any other applicable subsection.

1.17 REVIEW AND ACCEPTANCE OF PROJECT SCHEDULE SUBMITTALS

A. The Construction Administrator shall review schedule submittals for conformance with the requirements of the Contract Documents. Schedule review comments by the Construction Administrator may address whether items of Work are omitted, activity durations are reasonable or that the level of labor, materials, and equipment, the means, methods, timing, and sequencing of the Work are practicable. The planning, scheduling or execution of the Work and the accuracy of any Project Schedule shall remain the sole responsibility of the Contractor.

B. During the review of any of the submissions required by this section, if any of the following conditions are discovered the submittal shall be returned by the Construction Administrator without further review for correction and re-submittal:

1. The submittal is incomplete.

2. The submittal does not comply with the specified format.

3. A component of the submittal has not been prepared in accordance with all of the requirements of this section.

4. The quality of the submittal indicates that the Contractor has failed to perform an internal quality control review prior to submission.

5. There is an inconsistency between electronic files and printed material.

C. It is the Contractor's responsibility to ensure that all Project Schedules are in compliance with all of the requirements of the Contract Documents. The Construction Administrator's failure to return a submittal shall not be construed to mean that the submittal is in compliance with the requirements of the Contract Documents. The Construction Administrator, at its discretion, may choose to complete a submittal review even though the submittal fails to meet one of more of the conditions for rejection stated herein.

D. The acceptance of any Project Schedule by the Construction Administrator does not constitute acceptance or approval of any change to the requirements of the Contract Documents including but not limited to any mandated construction sequences. The Construction Administrator is not responsible for any erroneous assumptions or information in any Project Schedules regardless of origin.

E. The Contractor shall be responsible for all delays due to its failure to submit complete submittals in accordance with the requirements of the Contract Documents.

F. The Schedule submitted will not be considered acceptable until all of the Construction Administrator's comments are incorporated into the schedule to the Construction Administrator's satisfaction.

G. Errors in any Project Schedule accepted by the Construction Administrator, including but not limited to activity durations, relationships between activities, resource allocation or other float suppression techniques that do not accurately reflect the work may be identified at any time and once identified shall be corrected by the Contractor.

H. Construction Administrator's acceptance of a Schedule Update shall not constitute the approval of a time extension should the Project Completion Date or Contract Milestone(s) be shown as delayed.

I. Notwithstanding any review, review comments, acceptance, scheduling assistance or direction to change an/or revise any schedule by the Construction Administrator, the schedules shall at all times be the Contractor's schedule for performing the Work and not be considered as any Construction Administrator direction constituting a change unless the Contractor gives appropriate notice and the other Contract provisions for determining merit and entitlement are met.

1.18 PAYMENT

A. When the Contractor submits its schedule of values in accordance with the General Conditions, it shall include an amount for the scheduling work associated with this section, this cost to be paid in accordance with section (01 29 76).

B. Failure of the Contractor to submit a Baseline Schedule or Revised Baseline Schedule for any portion of the work in accordance with t his specification may result in the withholding all Contract payment until the schedule is submitted to, and accepted for compliance with the specification and reasonableness, by the Construction Administrator.

C. In the event the project extends beyond the original completion date by more than 30 days, and a time extension is granted to the Contractor, the Construction Administrator may require additional CPM updates which will be paid at the per month cost for the Scheduling Update services.

1.19 DISTRIBUTION

A. Distribute copies of the computer generated schedules to Construction Administrator, Architect, Owner, Subcontractors, suppliers, and other concerned parties.

B. Instruct recipients to promptly report, in writing, problem anticipated by projections indicated in schedules.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01 32 16.13

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[i] Addendum 2 :Item 14: delete requirement to provide software to the Owner

ADDENDUM 2, Item 3

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The Construction Documents, consisting of Drawings, Specifications, and general provisions of the Contract, including Division 00 General and Supplementary Conditions and other Division 01 Specification Sections, are complimentary; they include and apply to this Section

1.2 SUMMARY

A. **This Section Includes** administrative and procedural requirements for submittals required for performance of the Work, including but not limited to the following:

1. Submittal schedule.
2. Shop Drawings.
3. Product Data.
4. Samples.
5. Delegated Design Submittals.
6. Quality assurance submittals.
7. Proposed "Substitutions/Equals".
8. Warrantee samples.
9. Coordination Drawings.
10. O & M Manuals

B. **Administrative Submittals:** Refer to other Division 01 Sections and other Contract Documents for requirements for administrative submittals. Such submittals include, but are not limited to, the following:

1. Permits.
2. Applications for Payment.
3. Performance and payment bonds.
4. Contractor's Construction Schedule or CPM Schedule.
5. Daily construction reports.
6. Construction Photographs.
7. Insurance certificates.
8. List of subcontractors.
9. Subcontractors/Suppliers FEIN number's and Connecticut tax registration number.

C. Related Requirements:

1. Division 01 Section 01 25 00 "Substitution Procedures" specifies requirements for submittal of requests for equals and substitutions.
2. Division 01 Section 01 29 76 "Progress Payment Procedure s" specifies requirements for submittal of the Schedule of Values.
3. Division 01 Section 01 31 00 "Project Management and Coordination" specifies requirements governing preparation and submittal of required Coordination Drawings.
4. Division 01 Section 01 31 19 "Project Meetings" specifies requirements for submittal and distribution of meeting and conference minutes.
5. Division 01 Section 01 32 16.13 "CPM Schedules" for requirements for CPM scheduling and reporting progress of work.
6. Division 01 Section 01 35 26 "Government Safety Requirements" specifies the requirements for safety plans, reports, and investigation submittals.

7. Division 01 Section 01 45 00 "Quality Control" specifies requirements for submittal of inspection and test reports and mockups.
8. Division 01 Section 01 77 00 "Closeout Procedures" specifies requirements for submittal of Project Record Documents and warranties at project closeout.
9. Division 01 Section 01 78 30 "Warranties and Bonds".

1.3 DEFINITIONS

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

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

C. **Coordination Drawings** show the relationship and integration of different construction elements that require careful coordination during fabrication or installation to fit in the space provided or to function as intended and as identified in the Specification Divisions 02 through 49.

1. Preparation of Coordination Drawings is specified in Division 01 Section 01 31 16 "Coordination Drawing Procedure" and may include components previously shown in detail on Shop Drawings or Product Data.
2. Coordination Drawings are separate from Shop Drawings and are developed after HVAC sheet metal Shop Drawings have been approved by the Engineer.

D. **Field Samples** are full-size physical examples erected on-site to illustrate products, finishes, coatings, or finish materials. Field samples are used to establish the standard by which the Work will be judged.

E. **Mockups** are full-size assemblies for review of construction, coordination, testing, or operation; they are not Samples.

F. **File Transfer Protocol (FTP):** Communications protocol that enables transfer of files to and from another computer over a network and that serves as the basis for standard Internet protocols. An FTP site is a portion of a network located outside of network firewalls within which internal and external users are able to access files.

G. **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.

1.4 SUBMITTAL SCHEDULE

A. **General:** After development and review by the Owner and Architect acceptance of the Contractor's CPM Schedule prepare a complete schedule of submittals. Submit the schedule to the Construction Administrator within thirty (30) Calendar Days of Contract Award.

1. Coordinate Submittal Schedule with the list of subcontracts, Schedule of Values, and the list of products as well as the Contractor's CPM Schedule.
2. Prepare the schedule in chronological order. Provide the following information:
   a. Schedule date for the initial submittal.
   b. Related section number.
   c. Submittal category (Shop Drawings, Product Data, or Samples).
   d. Name of Subcontractor.
   e. Description of the part of Work covered.
   f. Scheduled date for resubmittal.
   g. Scheduled date for the Architect’s final release of approval.

B. **Submittal Schedule:** Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication,

and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Architect and Contractor and additional time for handling and reviewing submittals required by those corrections.

1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
2. Initial Submittal: Submit concurrently with startup construction schedule. Include submittals required during the first 60 days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction schedule.
    a. Submit revised submittal schedule to reflect changes in current status and timing for submittals.

C. **Distribution:** Following response to the initial submittal, print and distribute copies to the Construction Administrator, Architect, Owner, subcontractors, and other parties required to comply with submittal dates indicated. Post copies in the Project meeting room and field office.

1. When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in construction activities.

D. **Schedule Updating:** Revise the schedule after each meeting or activity where revisions have been recognized or made. Issue the updated schedule concurrently with the report of each meeting.

1.5 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

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

1. When physical submittals are made with paper transmittals, provide a simultaneous electronic record that includes scans or photo files of the physical submittal. The electronic submittal will be used to record official responses of the Architect and will have appended as necessary, additional scans or photo files of the physical submittal to maintain a full and complete electronic record of all submittals.
2. Provide electronic and paper submittals for each type of submittal as specified below.

B. Paper Submittals and Samples:

1. Paper Submittals: Provide cover sheet on each submittal item for identification.
2. Samples: Place a permanent label on each submitted sample for identification.
3. Submittal Cover Page or Label: Include the following information:
    a. Indicate name of firm or entity that prepared each sample for submission or submittal on label or title block.
    b. Project name.
    c. Date.
    d. Name of Architect.
    e. Name of Contractor.
    f. Name of subcontractor.
    g. Name of supplier.
    h. Name of manufacturer.
    i. Submittal number or other unique identifier, including revision identifier.
    j. Number and title of appropriate Specification Section.
    k. Drawing number and detail references, as appropriate.

ADDENDUM 2, Item 3

l. Location(s) where product is to be installed, as appropriate.

m. Other necessary identification.

n. Provide a space approximately 4 by 5 inches on label or beside title block as a location for the Architect's Shop Drawing Review Stamp.

o. Provide a space approximately 4 by 5 inches on label or beside title block to record Contractor's review and approval markings and action taken by Architect and Contractor.

4. Action Submittals: Submit three paper copies of each submittal unless otherwise indicated. Architect, through Contractor, will return two copies.

5. Informational Submittals: Submit two paper copies of each submittal unless otherwise indicated. Architect and Contractor will not return copies.

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

1. Post electronic submittals as unprotected PDF files that can be marked up electronically directly to Project Web site specifically established for Project.

2. Architect will review and mark-up if necessary or will forward to Consultant for review. Reviewed and marked-up submittals will be returned through Contractor to Contractor. Architect will retain copy of reviewed submittal.

3. Retain reviewed and marked up copy of submittal file as an electronic project record file.

4. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.

5. Name file with submittal number or other unique identifier, including revision identifier.

6. Submittal Cover Page: Provide means for insertion to permanently record Contractor's review and approval markings and action taken by Architect and Contractor.

a. Provide a space on submittal cover page approximately 4 by 5 inches beside title block as a location to show the Architect's Shop Drawing Review Stamp.

b. Provide a space on submittal cover page approximately 4 by 5 inches on label or beside title block to record Contractor's review and approval markings and action taken by Architect and Contractor.

7. Transmittal Form for Electronic Submittals: Use software-generated form from electronic project management software containing the following information:

a. Project name.

b. Date.

c. Name and address of Architect.

d. Name of Contractor.

e. Name of Sub-Contractor.

f. Name of firm or entity that prepared submittal.

g. Names of subcontractor, manufacturer, and supplier.

h. Category and type of submittal.

i. Submittal purpose and description.

j. Specification Section number and title.

k. Specification paragraph number or drawing designation and generic name for each of multiple items.

l. Drawing number and detail references, as appropriate.

m. Location(s) where product is to be installed, as appropriate.

n. Related physical samples submitted directly.

o. Indication of full or partial submittal.

p. Transmittal number numbered consecutively.

q. Submittal and transmittal distribution record.

r. Other necessary identification.

s. Remarks.

8. Metadata: Include the following information as keywords in the electronic submittal file metadata:

a. Project name.

b. Number and title of appropriate Specification Section.

c. Manufacturer name.

d. Product name.

D. **Options:** Identify options requiring selection by Architect.

E. Deviations and Additional Information:

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

2. For Electronic Submittals: On separate page included in electronic submittal file, immediately following transmittal form, and bearing Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect and Contractor on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same identification information as related submittal.

F. **Resubmittals:** Make resubmittals in same form and number of copies as initial submittal.

1. Note date and content of previous submittal.

2. Number with same number as initial submittal with suffix indicating resubmittal.

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

4. Resubmit submittals until they are marked “No Exceptions Taken,” or “Make Corrections Noted” and with markings and/or notations as indicated by the Architect.

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

H. **Use for Construction:** Use only final submittals marked “No Exceptions Taken,” or “Make Corrections Noted” and with markings and/or notations as indicated by the Architect.

I. **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. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.

3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.

4. 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.

5. Construction Administrator reserves the right to:

a. Withhold action on a submittal requiring coordination with other submittals until related

submittals are received.

b. Reject incomplete submittals.

c. Require resubmittal of incomplete submittals.

d. Withhold action on incomplete submittals until data required to complete submittals have been provided.

e. Require resubmission of submittals inadequately reviewed by Contractor.

J. **Processing Time:** Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect and Construction Administrator receipt of submittal unless delivered for receipt after noon on Friday or the day before a holiday, in which case the submittals shall be logged to begin the review period on the following Monday or next workday. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1. Initial Review: Allow fifteen (15) calendar days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect and Construction Administrator will advise Contractor when a submittal being processed must be delayed for coordination with related submittals not yet received. Additional time will be required if processing must be delayed to accommodate review of related subsequent submittals.

2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.

3. Resubmittal Review: Allow fifteen (15) calendar days for review of each resubmittal.

4. Mass Submittals, Definition: Six (6) or more submittals in one (1) day or twenty (20) or more submittals in one (1) week.

5. If “Mass Submittals” are received, Architect’s review time stated above may be extended as necessary to perform proper review. Architect will review “Mass Submittals” based upon priority determined by Architect after consultation with Owner and Contractor.

6. Very large submittals will require additional time to review. Coordinate submissions accordingly.

1.6 DELEGATED DESIGN SUBMITTALS

A. **Delegated Design:** Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, as part of the Base Bid for the Project perform design analysis and/or perform certifications stating conformance with requirements, and provide shop drawings and design analysis signed and sealed by the Professional Engineer licensed in the jurisdiction where the Project is to be erected and responsible for their production demonstrating compliance of products and systems with specific performance and design criteria indicated including but not limited to dead loads, thermal expansion and contraction, live loads, point and uniform loads, wheel loads, seismic loads, wind loads, and snow loads.

1.7 SHOP DRAWINGS

A. **Submit newly prepared information** drawn accurately to scale. Highlight, encircle, or otherwise indicate deviations from the Contract Documents. Do not reproduce Contract Documents or copy standard information as the basis of Shop Drawings. Standard information prepared without specific reference to the Project is not a Shop Drawing.

1. Submit Shop Drawings electronically as unprotected PDFs of drawings that can be marked up electronically.

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

B. **Shop Drawings** include fabrication and installation Drawings, setting diagrams, schedules, patterns, templates and similar Drawings.

1. Include the following information:

a. Dimensions.

b. Identification of products and materials included by sheet and detail number.

c. Compliance with specified standards.

d. Notation of coordination requirements.

e. Notation of dimensions established by field measurement.

f. The Contractor's submittal shall identify the specification section and/or drawing number applicable to the submittal.

g. Details shall be large scale and/or full size.

C. **The Contractor shall review** the Shop Drawings, add his notes, comments and corrections, stamp with his approval, and submit them with reasonable promptness and in orderly sequence so as to cause no delay in his Work or in the Work of any subcontractor. Shop Drawings shall be properly identified as specified for item, material, workmanship, and project number. At the submission, the Contractor shall inform the Architect, in writing of any deviation in the shop drawings from the requirements of the Contract Documents. Do not submit shop drawings for review which have not been reviewed and approved by the Contractor.

D. **The Architect will review** and comment on shop drawings with reasonable promptness so as to cause no delay, but only for conformance with the design concept of the project and with the information given in the Contract Documents. Refer to Article 5 of the General Conditions. Shop Drawings received by the Architect that indicate lack of review by the Contractor, insufficient study of drawings and specifications, illegible portions or gross errors will be rejected outright. Such rejections shall not constitute an acceptable reason for granting the Contractor additional time to perform the work.

E. **The Contractor shall make any corrections** required by the Architect and shall resubmit corrected copies of Shop Drawings until fully reviewed.

F. Upon final review after final approval, submit four (4) hard copy prints of final reviewed and approved shop drawings for use by the Construction Administrator.

G. **The Architect's review and comments** on Shop Drawings shall not relieve the Contractor of responsibility for any deviation from the requirements of the Contract Documents.

H. **Only final reviewed Shop Drawings** are to be used on the Project site.

I. **The Work installed** shall be reviewed in accordance with the Shop Drawings and the drawings and specifications. Final Review of the Shop Drawings by the Architect shall constitute acceptance by the State and the Architect of a variation or departure that is **clearly identified**. If the Contractor believes notations made by the A/E increases the value or scope of the CD's, the Contractor must provide written notice to the Construction Administrator within **seven (7)** Calendar Days of this issue. Final reviewed Shop Drawings shall not replace or be used as a vehicle to issue or incorporate change orders or substitutions. Substitutions shall be submitted in accordance with Division 01 Section 01 25 00 "Substitution Procedures".

J. **BIM File Incorporation:** Contractor will incorporate Contractor's Shop Drawing files into Building Information Model established for Project.

K. **Coordination Drawings:** Refer to Section 01 31 00 “Project Management and Coordination” for requirements for coordination drawings.

1.8 PRODUCT DATA

A. **Submit Product Data** electronically as unprotected PDFs that can be marked up electronically.

B. **Collect Product Data** into a single submittal for each element of construction or system. Product Data includes printed information, schedules, such as manufacturer's installation instructions, catalog cuts, standard color charts, roughing-in diagrams and templates, standard wiring diagrams, and performance curves.

1. Mark Product Data to show applicable choices and options. Where Product Data includes information on several products that are not required, mark copies to indicate the applicable information. Include the following information:

a. Manufacturer's printed recommendations.

b. Compliance with trade association standards.

c. Compliance with recognized testing agency standards.

d. Application of testing agency labels and seals.

e. Notation of dimensions verified by field measurement.

f. Notation of coordination requirements.

2. Do not submit Product Data until compliance with requirements of the Contract Documents has been confirmed.

3. Preliminary Submittal: Submit Product Data where selection of options is required.

4. Submittals: Submit product data for review as unprotected PDFs that can be marked up electronically. Architect will review and will post reviewed product data with action taken and corrections and modifications required. Contractor will download reviewed and marked-up copy of PDF and print five (5) copies where required for maintenance manuals.

a. Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.

5. Distribution: Furnish copies of final submittal to installers, subcontractors, suppliers, manufacturers, fabricators, and others required for performance of construction activities. Show distribution on transmittal forms.

a. Do not proceed with installation until a finalized copy of Product Data is in the Installer's possession.

b. Do not permit use of unmarked copies of Product Data or Product Data that is not finalized in connection with construction.

1.9 SAMPLES

A. **Submit full-size, fully fabricated Samples** cured and finished as specified and physically identical with the material or product proposed. Samples include partial sections of manufactured or fabricated components, cuts or containers of materials, color range sets, and swatches showing color, texture, and pattern.

1. Simultaneously with submittal of physical sample, submit corresponding electronic submittal of Sample transmittal, digital image file illustrating Sample characteristics, and identification information as unprotected PDF that can be marked up to maintain full electronic record of submittals.

2. Store, mount or display Samples on site in the manner to facilitate review of qualities indicated. Prepare Samples to match the Architect's sample.

3. Place a permanent label on each submitted sample for identification. Include the following information:

a. Generic description of the Sample.

b. Indicate name of firm or entity that prepared each sample for submission on label.

c. Project name.

d. Date.

e. Name of Architect.

f. Name of Contractor.

g. Name of Contractor.

h. Name of subcontractor.

i. Sample source.

j. Product name or name of the manufacturer.

k. Compliance with recognized standards.

l. Availability and delivery time.

m. Submittal number or other unique identifier, including revision identifier.

n. Number and title of appropriate Specification Section.

o. Drawing number and detail references, as appropriate.

p. Location(s) where product is to be installed, as appropriate.

q. Other necessary identification.

r. Provide a space approximately 4 by 5 inches on label as a location for the Architect's Shop Drawing Review Stamp.

s. Provide a space approximately 4 by 5 inches on label to record Contractor's review and approval markings and action taken by Architect and Contractor.

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

a. Where variation in color, pattern, texture, or other characteristic is inherent in the material or product represented, submit at least **three (3)** multiple units that show approximate limits of the variations.

b. Refer to other Specification Sections for requirements for Samples that illustrate workmanship, fabrication techniques, details of assembly, connections, operation, and similar construction characteristics.

c. Refer to other Sections for Samples to be returned to the Contractor for incorporation in the Work. Such Samples must be undamaged at time of use. On the transmittal, indicate special requests regarding disposition of Sample submittals.

d. Samples not incorporated into the Work, or otherwise designated as the Owner's property, are the property of the Contractor and shall be removed from the site prior to Substantial Completion.

5. Preliminary Submittals: Submit a full set of choices where Samples are submitted for selection of color, pattern, texture, or similar characteristics from a range of standard choices, unless otherwise noted in specification section.

a. The Architect will review and return preliminary submittals with the Architects notation, indicating selection and other action.

6. Submittals: Except for Samples illustrating assembly details, workmanship, fabrication techniques, connections, operation, and similar characteristics, submit **three (3)** sets. The Architect will return **one (1)** set marked with the action taken.

7. Maintain sets of Samples, as returned, at the Project Site, for quality comparisons throughout the course of construction.

a. Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.

b. Sample sets may be used to obtain final acceptance of the construction associated with each set.

B. **Distribution of Samples:** Prepare and distribute additional sets to subcontractors, manufacturers, fabricators, suppliers, installers, and others as required for performance of the Work. Show distribution on transmittal forms.

1. Field samples are full-size examples erected on-site to illustrate finishes, coatings, or finish materials and to establish the Project standard.

a. Comply with submittal requirements to the fullest extent possible. Process transmittal forms to provide a record of activity.

1.10 QUALITY ASSURANCE SUBMITTALS

A. **Submit Quality Assurance Submittals** electronically as unprotected PDFs that can be marked up electronically.

B. **Submit Quality-Control submittals**, including design data, certifications, manufacturer's instructions, manufacturer's field reports, and other quality-control submittals as required under other Sections of the Specifications.

C. **Certifications:** Where other Sections of the Specifications require certification that a product, material, or installation complies with specified requirements, submit a notarized certification from the manufacturer certifying compliance with specified requirements.

1. **Signature:** Certification shall be signed by an officer of the manufacturer or other individual authorized to sign documents on behalf of the company.

D. **Inspection and Test Reports:** Requirements for submittal of inspection and test reports from independent testing agencies are specified in Division 01 Section 01 45 00 "Quality Control."

1.11 DAILY CONSTRUCTION REPORTS

A. **Submit Daily Construction Reports** electronically as unprotected PDFs that can be marked up electronically.

B. **Prepare a daily construction report** recording the following information concerning events at the site, and submit duplicate copies to the Construction Administrator at weekly intervals:

1. List of subcontractors at the site.
2. Approximate count of personnel at the site.
3. High and low temperatures, general weather conditions.
4. Accidents and unusual events.
5. Meetings and significant decisions.
6. Stoppages, delays, shortages, and losses.
7. Meter readings and similar recordings.
8. List of equipment on site and identify if idle or in use.
9. Orders and requests of governing authorities.
10. Change Orders received, start and end dates.
11. Services connected, disconnected.
12. Equipment or system tests and startups.
13. Partial Completion’s, occupancies.
14. Substantial Completion’s authorized.
15. Equals or Substitutions approved or rejected.

1.12 ARCHITECT'S ACTION

A. **Except for submittals for the record or information,** where action and return is required, the Architect will review each submittal, mark to indicate action taken, and return promptly.

1. Compliance with specified characteristics is the Contractor's responsibility.

B. **Action Stamp:** The Architect will stamp each submittal with a uniform, action stamp. The Architect will mark the stamp appropriately to indicate the action taken, as follows:

1. **No Exceptions Taken:** Indicates that Contractor may proceed with fabrication, purchase, or both of the item as submitted.

a. When the Architect marks a submittal "No Exceptions Taken," the Work covered by the submittal may proceed provided it complies with requirements of the Contract Documents. Final payment depends on that compliance.

2. **Make Corrections Noted:** Indicates that Contractor may proceed with fabrication, purchase, or both of the item, subject to complying with markings and/or notations made by the Architect. Resubmittal is not required.

a. Final-But-Restricted Release: When the Architect marks a submittal "Make Corrections Noted," the Work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents. Submit corrected copies for record. Final payment depends on that compliance.

3. **Revise and Resubmit:** Indicates that Contractor may not proceed with fabrication, purchase, or both of the item as submitted. The submitted item may be acceptable, subject to revisions as generally pointed out in the Architect's review markings and notations. Resubmittal is required.

4. **Rejected:** Indicates that Contractor may not proceed with fabrication, purchase, or both of the item as submitted. In the Architect's judgment, the submitted item cannot be made to comply with contract requirements. Resubmittal is not allowed.

   a. Returned for Resubmittal: When the Architect marks a submittal "Rejected, or Revise and Resubmit," do not proceed with Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal according to the notations; resubmit without delay. Repeat if necessary to obtain different action mark.

   b. Do not use, or allow others to use, submittals marked "Rejected, or Revise and Resubmit" at the Project Site or elsewhere where Work is in progress.

5. **Submit Specified Item:** Indicates that Contractor may not proceed with fabrication, purchase, or both, of the item as submitted. In the Architect's judgment, the submitted item is not equal in quality, functionality, or both to the specified item. Submit the specified item.

6. **Other Action:** Where a submittal is for information or record purposes or special processing or other activity, the Architect will return the submittal marked "Action Not Required."

C. **Unsolicited Submittals:** The Architect will discard unsolicited submittals without action.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION (NOT APPLICABLE)

END OF SECTION 01 33 00

ADDENDUM 2, Item 3

(B L A N K P A G E)

ADDENDUM 2, Item 3

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including Division 00 General Conditions of the Contract for Construction for Design-Bid-Build and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for performing alteration and renovation Work.

B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 00 Section 00 30 00 “General Statements for Available Information" for information that is available in addition to the Bidding Documents for review by bidders. Such information may include an existing conditions survey, contaminated soil reports, contaminated groundwater reports, hazardous building material reports, geotechnical data, etc.

2. Division 31 Sections relating to excavation and earth work.

3. Requirements of this Section apply to mechanical and electrical installations. Refer to Division 21, 22, 23 and 26 Sections for other requirements and limitations applicable to Work by mechanical and electrical installations connecting to or extending existing systems.

C. Definitions:

1. Clean Fill: naturally occurring native soils or processed stone crushed from indigenous rock.

a. Imported fill containing brick, ceramics, or concrete to any detectable extent is not allowed as a constituent of “Clean Fill” for the purposes of this Project.

b. Asphalt paving fragments from any source and at any concentration are not allowed as a constituent of “Clean Fill” for the purposes of this Project.

2. Contaminated Soil: Treated or untreated soil and/or sediment affected by a known or suspected release and determined, or reasonably expected to contain substances exceeding Residential Direct Exposure Criteria or GA Pollutant Mobility Criteria, as these terms are defined in the Remediation Standard Regulations (RCSA Section 22a-133k-1).

3. Hazardous Soil: Soil that is classified as a hazardous waste. Soil is classified as hazardous waste if it exhibits a hazardous waste characteristic or if it contains RCRA-listed hazardous constituents above Connecticut’s RCRA "Contained-In" Policy dated May 2002.

4. Natural Soil: Soil in which all substances naturally occurring therein are present in concentrations not exceeding the concentrations of such substance occurring naturally in the environment and in which soil no other substance is analytically detectable.

5. Polluted Soil: Soil affected by a release of a substance at a concentration above the analytical detection limit for such substance in accordance with RCSA 22a-133k-1(a)(45) or for naturally occurring substance at a concentration that exceeds concentrations that naturally occur in the environment.

6. Regulated Soil: Includes Polluted Soil, Contaminated Soil, and Hazardous Soil.

7. Groundwater Remediation Wastewater: Wastewater generated in connection with investigating pollution or remediating polluted groundwater or soil. Groundwater remediation wastewater includes without limitation groundwater withdrawn from a groundwater recovery well; groundwater which collects in an excavation or foundation drain or other subsurface facility or structure; groundwater contaminated runoff and stormwater impacted by on-site pollutants from any construction activity; condensate resulting from construction or maintenance of a soil vapor extraction system; and wastewater generated by developing, testing, sampling, or purging a well.

PART 2 - PRODUCTS

2.1 PRODUCTS FOR PATCHING AND EXTENDING WORK

A. New materials: As specified in product sections; match existing Products and Work for patching and extending Work.

B. Type and Quality of Existing Products: Determine by inspecting and testing Products where necessary,

PART 3 - EXECUTION

3.1 INSPECTION

A. General:

1. Observe all existing conditions prior to submitting a bid. Include in the bid, existing conditions and their impact, particularly to cost and health and safety of workers and occupants, and proper function and operation of the facility. Be aware of other work being performed. Failure to visit the site shall in no way provide relief from the necessity of furnishing materials or performing any work that may be required to complete the work in accordance with the Contract Documents without additional cost to the Owner. All site visits shall be scheduled with the Owner.

2. The quantities, locations and the extent of work indicated are best estimates.

a. Characterization, quantification, and verification of soils removal in progress will be performed by the original Study environmental consultant.

3.2 PROJECT PROCEDURES FOR WORK INVOLVING REGULATED SOILS:

A. The Contractor is responsible for the excavation, staging, loading, transportation, and disposal of all identified Regulated Soils.

B. The Contractor shall conduct all demolition and removal Work, specified in the Technical Specifications Sections of this Project Manual, in conformance with the regulations and as specified in Sections covering Earthwork and site improvements with advice from, Section 50 00 00 Project-Specific Additional Information, and Drawings indicating the limits of Regulated Soil and protective measures.

C. The testing report for Regulated Soils is in Division 50 00 00 Project-Specific Available Information, Section 50 20 00 Environmental Assessment Information in Volume Four of the Technical Specifications.

1. The state has retained the environmental consultant who prepared the soils report identified in Section 50 20 00 to monitor the removal of Regulated Soils. It is the Contractor's responsibility to cooperate with the environmental consultant and verify that all field conditions and material dispositions are compliant with applicable regulation during the performance of their Work.

D. If the Contractor encounters any suspected Regulated Soil that was not previously identified and assigned as the Contractor's responsibility, immediately notify the Construction Administrator in writing.

1. The Owner will respond within four (4) Calendar Days after receiving the Contractor's written request to the Construction Administrator for testing the suspect soil.

2. The State shall have the soil tested, characterized, and quantified.

3. The Owner may request the Contractor to remediate and dispose of the addition Regulated Soils subject to the compensation identified in "Unit Prices," in Section 01 20 00 Contract Considerations.

E. Dispose of all Contaminated Soil in accordance with applicable regulations.

3.3 PROJECT PROCEDURES FOR WORK INVOLVING CONTAMINATED GROUNDWATER:

A. No contaminated Groundwater is known to exist at this site.

B. If the Contractor encounters Contaminated Groundwater, immediately notify the Construction Administrator in writing.

1. The State shall arrange to test the groundwater and abate, if indicated.

2. The Owner will respond within four (4) Calendar Days after receiving the Contractor's written request to the Construction Administrator for testing the suspect groundwater.

3.4 INSTALLATION

A. Coordinate Work to expedite completion, and if required sequence Work to accommodate Owner's adjacent occupancy.

B. Install products as specified in individual specification sections.

3.5 TRANSITIONS

A. Where new Work connects to existing, perform splices and taps to maintain flow and continuity of the trunk line while feeding full capacity required by the branch that is spliced or tapped.

3.6 REPAIR OF DAMAGE

A. Patch or replace portions of existing conditions that are damaged, lifted, discolored, or showing imperfections attributable to alterations work.

B. Repair substrate prior to patching finishes.

3.7 FINISHES

A. Finish surfaces as specified in individual product specification sections.

B. Finish patches to produce uniform finish and texture over entire area. When finish cannot be matched, refinish entire surface to nearest intersections.

3.8 CLEANING

A. In addition to cleaning specified in Section 01 50 00 "Temporary Facilities and Controls", clean Agency occupied areas of Work.

END OF SECTION 01 35 16

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ADDENDUM 2, Item 3

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This guide specification covers construction safety requirements and requirements for the protection of people, property, and resources. It is intended for use in construction, renovation, and demolition projects for the State of Connecticut Department of Administrative Services (DAS) / Construction Services (CS).

B. **Related Sections:** The following Sections contain requirements that relate to this Section:

1. Division 01 Section 01 33 00 Submittal Procedures specifies the requirements for submittal requirements;
2. Division 01 Section 01 31 19 "Project Meetings" specifies requirements for submittal and distribution of meeting and conference minutes.

1.2 REFERENCES

A. The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

AMERICAN SOCIETY OF SAFETY ENGINEERS (ASSE/SAFE) www.asse.org/publications/	
ASSE/SAFE A10.32	(2004) Fall Protection
ASSE/SAFE A10.34	(2001; R 2005) Protection of the Public on or Adjacent to Construction Sites
ASSE/SAFE Z359.1	(2007) Safety Requirements for Personal Fall Arrest Systems, Subsystems and Components
AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME) www.asme.org/Codes/	
ASME B30.22	(2005) Articulating Boom Cranes
ASME B30.3	(2004) Construction Tower Cranes
ASME B30.5	(2004) Mobile and Locomotive Cranes
ASME B30.8	(2004) Floating Cranes and Floating Derricks
NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) www.nfpa.org/	
NFPA 10	(2007) Portable Fire Extinguishers
NFPA 51B	(2009) Standard for Fire Prevention During Welding, Cutting, and Other Hot Work
NFPA 241	(2004) Safeguarding Construction, Alteration, and Demolition Operations
NFPA 70	(2008) National Electrical Code
NFPA 70E	Standard for Electrical Safety in the Workplace
CODE OF FEDERAL REGULATIONS (CFR) www.archives.gov/federal-register/cfr/	
10 CFR	Standards for Protection Against Radiation
29 CFR 1910	Occupational Safety and Health Standards
29 CFR 1910.28	Safety Requirements For Scaffolding.
29 CFR 1910.146	Permit-required Confined Spaces
29 CFR 1910.147	Control Of Hazardous Energy (Lockout/Tagout)
29 CFR 1910.178	Powered industrial trucks.
29 CFR 1915	Confined and Enclosed Spaces and Other
29 CFR 1926	Safety and Health Regulations for Construction
29 CFR 1926.500	Fall Protection
29 CFR 1926.550	Cranes and Derricks
US Army Core of Engineers (USACE)	

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www.iwr.usace.army.mil	
EM 385-1-1	Safety, and Health Requirements Manual (2008),
Federal Aviation administration (FAA)	
FAA Advisory Circular 70/7460-1L	- Standards for marking and lighting obstructions that have been deemed to be a hazard to navigable airspace

1.3 SUBMITTALS

A. An "O" followed by "A" indicates that the Owner acceptance; submittals not having an "O" designation are for Contractor Quality Control approval.

B. Submittal Procedures:

1. Preconstruction Submittals:

a. Accident Prevention Plan (APP): “O, A”;
b. Activity Hazard Analysis (AHA); “O, A”;
c. Crane Critical Lift Plan; “O, A”;
d. Proof of qualification for Crane Operators; O, A.

2. Test Reports: Submit reports as their incidence occurs, in accordance with the requirements of the paragraph entitled, "Reports."

a. Accident Reports;
b. Monthly Exposure Reports;
c. Crane Reports;
d. Regulatory Citations and Violations;
e. Gas Protection.

3. Certificates:

a. Confined Space Entry Permit;
b. Hot work permit;
c. License Certificates.
d. Certificate of Compliance – Crane

1.4 DEFINITIONS

A. Competent Person. A competent person is one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

B. Competent Person for Fall Protection. A person who is capable of identifying hazardous or dangerous conditions in the personal fall arrest system or any component thereof, as well as their application and use with related equipment, and has the authority to take prompt corrective measures to eliminate the hazards of falling.

C. Confined Space: A space which by design has limited openings for entry and exit, unfavorable natural ventilation which could contain or produce dangerous air contaminants, and which is not intended for continuous employee occupancy. Confined spaces include, but are not limited to storage tanks, process vessels, pits, silos, vats, degreasers, reaction vessels, boilers, ventilation and exhaust ducts, sewers, tunnels, underground utility vaults, and pipelines.

D. High Visibility Accident: Any mishap which may generate publicity and/or high visibility.

E. Medical Treatment; Medical treatment includes treatment administered by a physician or by registered professional personnel under the standing orders of a physician. Medical treatment does not include first aid treatment even through provided by a physician or registered personnel.

F. Operating Envelope: The area surrounding any crane. Inside this "envelope" is the crane, the operator riggers and crane walkers, rigging gear between the hook and the load, the load and the crane's supporting structure (ground, rail, etc.).

G. Qualified Person for Fall Protection: A person with a recognized degree or professional certificate and with extensive knowledge, training and experience in the field of fall protection; who is capable of performing design, analysis, and evaluation of fall protection systems and equipment.

H. Recordable Injuries or Illnesses: Any work-related injury or illness that results in:

1. Death, regardless of the time between the injury and death, or the length of the illness;
2. Days away from work (any time lost after day of injury/illness onset);

3. Restricted work;
4. Transfer to another job;
5. Medical treatment beyond first aid;
6. Loss of consciousness; or
7. A significant injury or illness diagnosed by a physician or other licensed health care professional, even if it did not result in (1) through (6) above.

I. Weight Handling Equipment (WHE) Accident: A WHE accident occurs when any one or more of the six elements in the operating envelope fails to perform correctly during operation, including operation during maintenance or testing resulting in personnel injury or death; material or equipment damage; dropped load; derailment; two-blocking; overload; and/or collision, including unplanned contact between the load, crane, and/or other objects. A dropped load, derailment, two-blocking, overload and collision are considered an accident even though no material damage or injury occurs. A component failure (e.g., motor burnout, gear tooth failure, bearing failure) is not considered an accident solely due to material or equipment damage unless the component failure results in damage to other components (e.g., dropped boom, dropped load, roll over, etc.).,

1.5 REGULATORY REQUIREMENTS

A. In addition to the detailed requirements included in the provisions of this Section see, **Division 01, Section 01 42 20 "Reference Standards and Definitions"** for other state laws, criteria, rules and regulations. Submit matters of interpretation of standards to the appropriate administrative agency for resolution before starting work. Where the requirements of this specification, applicable laws, criteria, regulations, and referenced documents vary, the most stringent requirements govern.

1.6 SITE QUALIFICATIONS, DUTIES, AND MEETINGS

A. Personnel Qualifications:

B. Site Safety and Health Officer (SSHO):

1. Provide a Site Safety and Health Officer (SSHO) at the work site at all times to perform safety and occupational health management, surveillance, inspections, and safety enforcement for the Contractor. The Contractor Quality Control (QC) person **can be the SSHO on this project**. Meet the following requirements within the SSHO as defined at the Preconstruction Conference.:

Level 1: Worked on similar projects. 10-hour OSHA construction safety class or equivalent within last **three** (**3) years**. Competent person training as needed

Level 2: A minimum of **three** (**3) years** safety work on similar project. 30-hour OSHA construction safety class or equivalent within last **3** years. Competent person training as needed

Level 3: A minimum of **five** (**5) years** safety work on similar projects. 30-hour OSHA construction safety class or equivalent within the last **five** (**5) years**. An average of at least 24 hours of formal safety training each year for the past 5 years. Competent person training as needed.

Level 4: A minimum of **ten (10)** years safety work of a progressive nature with at least **5** years of experience on similar projects. 30-hour OSHA construction safety class or equivalent within the last **five** (**5)** years. An average of at least 24 hours of formal safety training each year for the past 5 years with training for competent person status for at least the following **four, 4,** areas of competency: **Excavation; Scaffolding; Fall protection; Hazardous energy; Confined space; Health hazard recognition, evaluation and control of chemical, physical and biological agents; Personal protective equipment and clothing to include selection, use and maintenance**; **Level 5:** An Associate Safety Professional (ASP), Certified Safety Trained Supervisor (STS) and/or Construction Health & Safety Technician (CHST). A minimum of 10 years safety work of a progressive nature with at least 5 years of experience on similar projects. 30-hour OSHA construction safety class or equivalent within the last **five** (**5)** years. An average of at least **24** hours of formal safety training each year for the past **five** (**5)** years with training for competent person status for at least the following **4,** areas of competency: **Excavation; Scaffolding; Fall protection; Hazardous energy; Confined space; Health hazard recognition, evaluation and control of chemical, physical and biological agents; Personal protective equipment and clothing to include selection, use and maintenance;**

Level 6: A Certified Safety Professional (CSP) and/or Certified Industrial Hygienist (CIH). A minimum of **ten** (**10)** years safety work of a progressive nature with at least **five** (**5)** years of experience on similar projects. 30-hour OSHA construction safety class or equivalent within the last **five** (**5)** years. An average of at least **24** hours of formal safety training each year for the past **5** years with training for competent person status for at least the following **four 4,** areas of competency: **Excavation; Scaffolding; Fall protection; Hazardous energy; Confined space; Health hazard recognition, evaluation and control of**

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chemical, physical and biological agents; Personal protective equipment and clothing to include selection, use and maintenance.**C. Certified Safety Professional (CSP) and/or Certified Industrial hygienist (CIH):**

Provide a **Certified Safety Professional (CSP), and or Certified Industrial Hygienist (CIH),** at the work site to perform safety and occupational health management, surveillance, inspections, and safety enforcement for the Contractor. The **CSP, and or CIH,** shall be the safety and occupational health "competent person" as defined by this section. **The CSP and/or CIH, shall have no other duties than safety and occupational health management, inspections, and/or industrial hygiene.,**

D. Associate Safety professional (ASP), Certified Safety Trained Supervisor (STS) and/or Construction Health and Safety Technician (CHST):

Provide **a/an, Associate Safety Professional (ASP), Certified Safety Trained Supervisor (STS), and/or Construction Health & Safety Technician (CHST),** at the work site to perform safety management, surveillance, inspections, and safety enforcement for the Contractor. The **ASP, STS, and/or CHST,** shall be the safety and occupational health "competent person" as defined by this section. The **ASP, STS, and/or CHST,** shall be at the work site at all times whenever work or testing is being performed and shall conduct and document daily safety inspections. The **ASP, STS, and/or CHST,** shall have no other duties other than safety and occupational health management, inspections, and enforcement on this contract.

E. Crane Operators:

Meet the Crane Operators and Crane Operation requirements of the Connecticut Bureau of License and Permits – Cranes, Department of Administrative Services, Office of State Fire Marshal pursuant to C.G.S § 29-221 through 29-230. Provide proof of current license and qualification. For more information visit the DAS website (www.ct.gov/DAS) > Licensing, Certification, Permitting and Codes > Cranes, or call **(860) 713-5580 or (860) 713-5529**.

F. Personnel Duties:

1. Site Safety and Health Officer (SSHO):

- **a.** Conduct daily safety and health inspections and maintain a written log which includes area/operation inspected, date of inspection, identified hazards, recommended corrective actions, estimated and actual dates of corrections. Attach safety inspection logs to the Contractors' daily report.
- **b.** Conduct mishap investigations and complete required reports. Maintain the **OSHA Form 300 and Daily Production** reports for prime and sub-contractors. For more information visit the OSHA website at **www.osha.gov** > Employers > Recordkeeping Requirements and Forms.
- **c.** Maintain applicable safety reference material on the job site.
- **d.** Attend the pre-construction conference, pre-work meetings including preparatory inspection meeting, and periodic in-progress meetings.
- **e.** Implement and enforce accepted APPS and AHAs.
- **f.** Maintain a safety and health deficiency tracking system that monitors outstanding deficiencies until resolution. Post a list of unresolved safety and health deficiencies on the safety bulletin board.
- **g.** Ensure sub-contractor compliance with safety and health requirements.

Failure to perform the above duties will result in dismissal of the superintendent and/or SSHO, and a project work stoppage. The project work stoppage will remain in effect pending approval of a suitable replacement.

2. Certified Safety Professional (CSP, Certified Industrial Hygienist (CIH), Associate Safety Professional (ASP), Certified Safety Trained Supervisor (STS), and/or Certified Construction Health & Safety Technician (CHST):

- **a.** Perform safety and occupational health management, surveillance, inspections, and safety enforcement for the project.
- **b.** Perform as the safety and occupational health "competent person" as defined by this section.
- **c.** Be on-site **at least weekly** whenever work or testing is being performed.
- **d.** Conduct and document safety inspections.
- **e.** Shall have no other duties other than safety and occupational health management, inspections, and enforcement on this contract.

If either the **CSP, CIH, ASP, STS, or CHST** is appointed as the SSHO all duties of that position shall also be performed.

G. Meetings:

1. Preconstruction Conference:

a. Contractor representatives who have a responsibility or significant role in accident prevention on the project shall attend the preconstruction conference. This includes the project superintendent, site safety and health officer, quality control supervisor or any other assigned safety and health professionals who participated in the development of the **Accident Prevention Plan** (APP); (including the **Activity Hazard Analyses** (AHAs), and special plans, program and procedures associated with it).

b. Discuss the details of the submitted APP to include incorporated plans, programs, procedures and a listing of anticipated AHAs that will be developed and implemented during the performance of the contract. This list of proposed AHAs will be reviewed at the conference and an agreement will be reached between the Contractor and the Owner's Representative(s) as to which phases will require an analysis. In addition, establish a schedule for the preparation, submittal, review, and acceptance of AHAs to preclude project delays.

c. Deficiencies in the submitted APP will be brought to the attention of the Contractor at the preconstruction conference, and the Contractor shall revise the plan to correct deficiencies and re-submit it for acceptance. Do not begin work until there is an accepted APP.

2. Safety Meetings:

Safety meetings shall be conducted to review past activities, plan for new or changed operations, review pertinent aspects of appropriate AHA (by trade), establish safe working procedures for anticipated hazards, and provide pertinent safety and health training and motivation.

a. Meetings shall be conducted at least once a month for all supervisors on the project location and at least once a week for all workers by supervisors or foremen.

b. Meetings shall be documented, including the date, persons in attendance, subjects discussed, and names of individual(s) who conducted the meeting. Documentation shall be maintained and copies furnished to the Construction Administrator (CA) on request.

c. The Construction Administrator (CA) shall be informed of all scheduled meetings in advance and be invited to attend.

1.7 ACCIDENT PREVENTION PLAN (APP):

A. Use a qualified person to prepare the written site-specific APP.

1. Prepare the APP in accordance with the format and requirements of **US Army Core of Engineers (USACE), Safety, and Health Requirements Manual, EM 385-1-1,** or as approved by the CA and as supplemented herein. Cover all paragraphs and subparagraph elements in **USACE EM 385-1-1, Appendix A, "Minimum Basic Outline for Accident Prevention Plan"** or as approved by the CA. The USACE Safety, and Health Requirements Manual, EM 385-1-1 is available at the USACE Website **www.iwr.usace.army.mil.**

2. Specific requirements for some of the APP elements are described in **"B"** below. The APP shall be job-specific and address any unusual or unique aspects of the project or activity for which it is written.

B. The APP shall interface with the Contractor's overall safety and health program. Include any portions of the Contractor's overall safety and health program referenced in the APP in the applicable APP element and made site-specific. The Owner considers the Prime General Contractor to be the "controlling authority" for all work site safety and health of the subcontractors. Contractors are responsible for informing their subcontractors of the safety provisions under the terms of the contract and the penalties for noncompliance, coordinating the work to prevent one craft from interfering with or creating hazardous working conditions for other crafts, and inspecting subcontractor operations to ensure that accident prevention responsibilities are being carried out. The APP shall be signed by the person and firm (senior person) preparing the APP, the Contractor the on-site superintendent, the designated site safety and health officer and any designated Certified Safety Professional (CSP) and/or Certified Industrial Hygienist (CIH).

C. Submit the APP to the DAS/CS Project Manager and Construction Administrator **Fourteen (14) Calendar Days** prior to the date of the preconstruction conference for acceptance. Work cannot proceed without an accepted APP. Once accepted by the DAS/CS Project Manager and Construction Administrator the APP and attachments will be enforced as part of the contract. Disregarding the provisions of this contract or the accepted APP will be cause for stopping of work, at the discretion of the DAS/CS Project Manager and Construction Administrator until the matter has been rectified. Once work begins, changes to the accepted APP shall be made with the knowledge and concurrence of the DAS/CS Project Manager and Construction Administrator project superintendent, Site Safety and Health Officer **(**SSHO) and quality control manager. Should any hazard become evident, stop work in the area, secure the area, and develop a plan to remove the hazard. Notify the DAS/CS Project Manager and Construction Administrator within

Twenty (24) hours of discovery. Eliminate/remove the hazard. In the interim, take all necessary action to restore and maintain safe working conditions in order to safeguard onsite personnel, visitors, the public (as defined by **American Society of Safety Engineers**, **ASSE/SAFE A10.34 - Protection of the Public on or Adjacent to Construction Sites, see www.asse.org**) and the environment.

Copies of the accepted plan will be maintained at the Construction Administrator's office at the job site. Continuously reviewed and amended the APP, as necessary, throughout the life of the contract. Incorporate unusual or high-hazard activities not identified in the original APP as they are discovered.

D. APP Contents:
The contents of the Accident Prevention Plan (APP) shall be in accordance with **Appendix A** of the US Army Corps of Engineers, **EM 385-1-1 Safety and Health Requirements Manual**, Appendix A, Minimum Basic Outline for Accident Prevention Plans or as approved by the CA. For more information visit the USACE Website at **www.usace.army.mil/Library.**

1.8 ACTIVITY HAZARD ANALYSIS (AHA): Activity Hazard Analyses (AHAs) define the activities being performed and identify the sequences of work, the specific hazards anticipated, site conditions, equipment, materials, and the control measures to be implemented to eliminate or reduce each hazard to an acceptable level of risk. The Activity Hazard Analysis (AHA) format shall be in accordance with US Army Corps of Engineers, **EM 385-1-1 Safety and Health Requirements Manual** or as approved by the CA.

A. Submittals:
1. Submit initial AHA to CA for review at least **15,. Calendar Days** prior to the start of each phase. Format subsequent AHAs as amendments to the APP. The analysis should be used during daily inspections to ensure the implementation and effectiveness of the activity's safety and health controls.
2. The AHA list will be reviewed monthly at the Contractor supervisory safety meeting and updated as necessary when procedures, scheduling, or hazards change. Develop the activity hazard analyses using the project schedule as the basis for the activities performed. Any activities listed on the project schedule will require an AHA. The AHAs will be developed by the contractor supplier or subcontractor and provided to the prime contractor for submittal to the CA.

1.9 DISPLAY OF SAFETY INFORMATION
Within **one (1) Calendar Days** after commencement of work, erect a safety bulletin board at the job site. Include and maintain information on safety bulletin board as required by US Army Corps of Engineers, **EM 385-1-1 Safety and Health Requirements Manual**, Section 01.A.06 or as approved by the CA. Additional items required to be posted include:
A. Confined space entry permit.
B. Hot work permit.
C. Crane permit
D. Street permit(s)
E. Others (as required)

1.10 SITE SAFETY REFERENCE MATERIALS
Maintain safety-related references applicable to the project, including those listed in the article "References." Maintain applicable equipment manufacturer's manuals.

1.11 EMERGENCY MEDICAL TREATMENT
Contractors will arrange for their own emergency medical treatment. The Owner has no responsibility to provide emergency medical treatment.

1.12 REPORTS
A. Accident Reports
1. Conduct an accident investigation for recordable injuries and illnesses, and property damage accidents resulting in at least **Two Thousand Dollars ($2,000)** in damages, to establish the root cause(s) of the accident, complete “Accident Report Form” approved by the CA. Provide the report to the CA within **five (5) Calendar Days** of the accident.

B. Accident Notification
Notify the CA as soon as practical, but not later than **four hours (4),** after any accident meeting the definition of Recordable Injuries or Illnesses or High Visibility Accidents, property damage equal to or greater than $2,000, or any weight handling equipment accident.

1. Within notification include the following:

a. contractor name;
b. contract title;
c. type of contract;
d. name of activity,
e. installation or location where accident occurred;
f. date and time of accident;
g. names of personnel injured**;**
h. extent of property damage, if any; extent of injury, if known, and brief description of accident **to include type of construction equipment used, Personal Protective Equipment (PPE) used, etc.**. Preserve the conditions and evidence on the accident site until the U.S. Department of Labor Occupational Safety and Health Administration (USDOL-OSHA) investigation team arrives on-site and USDOL-OSHA investigation is conducted.

C. Monthly Exposure Reports
Monthly exposure reporting to the CA is required to be attached to the monthly Application for Payment request. This report is a compilation of employee-hours worked each month for all site workers, both prime and subcontractor. Provide on a form approved by the CA.

D. Crane Reports
Submit crane inspection reports on a form approved by the CA and as specified herein with Daily Reports of Inspections.

E. HOT WORK
Hot Work shall only be performed in accordance with the requirements of **NFPA 51B "Fire Prevention During Welding, Cutting and Other Hot Work Standard.**

1. Definitions:

a. Hot Work: Work involving burning, welding, or a similar operation that is capable of initiating fires or explosions. Examples listed by NFPA include arc welding, oxygen- fuel gas welding, open-flame soldering, brazing, thermal spraying, oxygen cutting, and arc cutting.

b. Permit Authorizing Individual (PAI). Means the individual designated by the General Contractor to authorize hot work. The PAI is permitted to be, among others, the General Contractor's project executive, supervisor foreperson, or designated safety administrator. The PAI CANNOT be the hot work operator except as permitted in **NFPA 51B**. The PAI is aware of the fire hazards involved and is familiar with the provisions of this standard.

2. Permit: Submit and obtain a written permit from the PAI prior to performing "Hot Work" (welding, cutting, etc.) or operating other flame-producing/spark producing devices, from the PAI. CONTRACTORS ARE REQUIRED TO MEET ALL CRITERIA BEFORE A PERMIT IS ISSUED. The General Contractor will provide at least **two (2)** twenty (20) pound 4A:20 BC rated extinguishers for normal "Hot Work". All extinguishers shall be current inspection tagged, approved safety pin and tamper resistant seal.

3. Fire Watch: It is also mandatory to have a designated FIRE WATCH for any "Hot Work" done at this activity. The Fire Watch shall be trained in accordance with **NFPA 51B Standard for Fire Prevention During Welding, Cutting, and Other Hot Work** and remain on-site for a minimum of 30 minutes after completion of the task or as specified on the hot work permit. When starting work in the facility, require personnel to familiarize themselves with the location of the nearest fire alarm boxes and place in memory the local fire department emergency phone number(s). ANY FIRE, NO MATTER HOW SMALL, SHAL BE REPORTED TO THE LOCAL FIRE DEPARTMENT, GENERAL CONTRACTOR'S AUTHORIZED REPRESENTATIVE, AND OWNER'S CA IMMEDIATELY.

1.13 FACILITY OCCUPANCY CLOSURE
Streets, walks, and other facilities occupied and used by the state User Agency shall not be closed or obstructed without written permission from the CA.

1.14 SEVERE STORM PLAN
In the event of a severe storm warning, the Contractor must:

A. Secure outside equipment and materials and place materials that could be damaged in protected areas.

B. Check surrounding area, including roof, for loose material, equipment, debris, and other objects that could be blown away or against existing facilities.

C. Ensure that temporary erosion controls are adequate.

PART 2 PRODUCTS

NOT USED.

PART 3 EXECUTION

3.1 CONSTRUCTION AND/OR OTHER WORK

Comply with the Connecticut State Building and Fire Safety Codes, OSHA regulations, and other references regulations. The most stringent standard prevails.

3.1.2 HAZARDOUS MATERIAL EXCLUSIONS

Notwithstanding any other hazardous material used in this contract, radioactive materials or instruments capable of producing ionizing/non-ionizing radiation (with the exception of radioactive material and devices used in accordance with **USACE EM 385-1-1** such as nuclear density meters for compaction testing and laboratory equipment with radioactive sources) as well as materials which contain asbestos, mercury or polychlorinated biphenyls, di-isocynates, lead-based paint are prohibited. The CA, upon written request by the Contractor may consider exceptions to the use of any of the above excluded materials.

3.1.3 UNFORESEEN HAZARDOUS MATERIAL

A. Related Section: Division 01, Section 01 35 16, Alteration Project Procedures.

3.2 PRE-OUTAGE COORDINATION MEETING

Contractors are required to apply for utility outages at least **fifteen (15) Calendar Days** in advance. As a minimum, the request should include the location of the outage, utilities being affected, duration of outage and any necessary sketches. Special requirements for electrical outage requests are contained elsewhere in this specification section. Once approved, and prior to beginning work on the utility system requiring shut down, attend a pre-outage coordination meeting with the CA, User Agency Representative, and Public Utilities representative to review the scope of work and the lock-out/tag-out procedures for worker protection. No work will be performed on energized electrical circuits unless proof is provided that no other means exist.

3.3 SAFETY LOCKOUT/TAGOUT PROCEDURES

A. The General Contractor shall ensure that each employee is familiar with and complies with these procedures and **OSHA 29 CFR 1910.147 Control Of Hazardous Energy (Lockout/Tagout).**

1. The General Contractor's “Authorized Employee” shall apply lockout/tagout tags and take other actions that, because of experience and knowledge, are known to be necessary to make the particular equipment safe to work on.
2. No person, regardless of position or authority, shall operate any switch, valve, or equipment that has an official lockout/tagout tag attached to it, nor shall such tag be removed except as provided in this section.
3. No person shall work on any equipment that requires a lockout/tagout tag unless he, his immediate supervisor project leader, or a subordinate has in his possession the stubs of the required lockout/tagout tags. Only qualified personnel shall perform work on electrical circuits.
4. A supervisor who is required to enter an area protected by a lockout/tagout tag will be considered a member of the protected group provided he notifies the holder of the tag stub each time he enters and departs from the protected area.
5. Identification markings on building light and power distribution circuits shall not be relied on for established safe work conditions.
6. Before clearance will be given on any equipment other than electrical (generally referred to as mechanical apparatus), the apparatus, valves, or systems shall be secured in a passive condition with the appropriate vents, pins, and locks. Pressurized or vacuum systems shall be vented to relieve differential pressure completely. Vent valves shall be tagged open during the course of the work. Where dangerous gas or fluid systems are involved, or in areas where the environment may be oxygen deficient, system or areas shall be purged, ventilated, or otherwise made safe prior to entry.

B. **Tag Placement**

Lockout/tagout tags shall be completed in accordance with the regulations printed on the back thereof and attached to any device which, if operated, could cause an unsafe condition to exist. If more than one group is to work on any circuit or equipment, the employee in charge of each group shall have a separate set of lockout/tagout tags completed and properly attached. When it is required that certain equipment be tagged, the State of Connecticut Authority Having Jurisdiction will review the characteristics of the various systems involved that affect the safety of the operations and the work to be done; take the necessary

actions, including voltage and pressure checks, grounding, and venting, to make the system and equipment safe to work on; and apply such lockout/tagout tags to those switches, valves, vents, or other mechanical devices needed to preserve the safety provided. This operation is referred to as "Providing Safety Clearance."

C. Tag Removal

When any individual or group has completed its part of the work and is clear of the circuits or equipment, the supervisor project leader, or individual for whom the equipment was tagged shall turn in his signed lockout/tagout tag stub to the Contractor. That group's or individual's lockout/tagout tags on equipment may then be removed on authorization by the Contractor.

3.4 FALL HAZARD PROTECTION AND PREVENTION PROGRAM

Establish a fall protection and prevention program, for the protection of all employees exposed to fall hazards. Within the program include company policy, identify responsibilities, education and training requirements, fall hazard identification, prevention and control measures, inspection, storage, care and maintenance of fall protection equipment and rescue and evacuation procedures.

A. Training

Institute a fall protection training program. As part of the Fall Hazard Protection and Prevention Program, provide training for each employee who might be exposed to fall hazards. Provide training by a competent person for fall protection in accordance with **USACE EM 385-1-1**, Section 21.A.16.

B. Fall Protection Equipment and Systems

Enforce use of the fall protection equipment and systems designated for each specific work activity in the Fall Protection and Prevention Plan and/or AHA at all times when an employee is exposed to a fall hazard. Protect employees from fall hazards as specified in **USACE EM 385-1-1, section 21.** In addition to the required fall protection systems, safety skiff, personal floatation devices, life rings etc., are required when working above or next to water in accordance with **USACE EM 385-1-1, paragraphs 05.H. and 05.I**. Personal fall arrest systems are required when working from an articulating or extendible boom, swing stages, or suspended platform. In addition, personal fall arrest systems are required when operating other equipment such as scissor lifts if the work platform is capable of being positioned outside the wheelbase. The need for tying-off in such equipment is to prevent ejection of the employee from the equipment during raising, lowering, or travel. Fall protection must comply with **OSHA 29 CFR 1926.500, Fall Protection, Subpart M, and ASSE/SAFE A10.32, Fall Protection.**

1. Personal Fall Arrest Equipment

Personal fall arrest equipment, systems, subsystems, and components shall meet **ASSE/SAFE Z359.1, Safety Requirements for Personal Fall Arrest Systems, Subsystems and Components.** Only a full-body harness with a shock-absorbing lanyard or self-retracting lanyard is an acceptable personal fall arrest body support device. Body belts may only be used as a positioning device system (for uses such as steel reinforcing assembly and in addition to an approved fall arrest system). Harnesses shall have a fall arrest attachment affixed to the body support (usually a Dorsal D-ring) and specifically designated for attachment to the rest of the system. Only locking snap
hooks and carabiners shall be used. Webbing, straps, and ropes shall be made of synthetic fiber. The maximum free fall distance when using fall arrest equipment shall not exceed 1.8 m 6 feet. The total fall distance and any swinging of the worker (pendulum-like motion) that can occur during a fall shall always be taken

2. Fall Protection for Roofing Work

Implement fall protection controls based on the type of roof being constructed and work being performed. Evaluate the roof area to be accessed for its structural integrity including weight-bearing capabilities for the projected loading.

a. Low Sloped Roofs:

(i) For work within 6 feet (6 feet (1.8 m) of an edge, on low-slope roofs, Protect personnel from falling by use of personal fall arrest systems, guardrails, or safety nets.

(ii) For work greater than (6 feet (1.8 m) from an edge, erect and install warning lines in accordance with **OSHA 29 CFR 1926.500, Fall Protection**.

b. Steep-Sloped Roofs: Work on steep-sloped roofs requires a personal fall arrest system, guardrails with toe-boards, or safety nets. This requirement also includes residential or housing type construction.

3. Existing Anchorage

Certified (or re-certified) by a qualified person for fall protection existing anchorages, to be used for attachment of personal fall arrest equipment in accordance with **ASSE/SAFE Z359.1, Safety Requirements for Personal Fall Arrest Systems, Subsystems and Components.** Exiting horizontal lifeline anchorages must be certified (or re-certified) by a registered professional engineer with experience in designing horizontal lifeline systems.

4. Horizontal Lifelines
Design, install, certify and use under the supervision of a qualified person horizontal lifelines for fall protection as part of a complete fall arrest system which maintains a safety factor of 2 **(OSHA 29 CFR 1926.500 Fall Protection).**

5. Guardrails and Safety Nets
Design, install and use guardrails and safety nets in accordance with **29 CFR 1926, Safety and Health Regulations for Construction Subpart M.**

6. Rescue and Evacuation Procedures
When personal fall arrest systems are used, the contractor must ensure that the mishap victim can self-rescue or can be rescued promptly should a fall occur. Prepare a Rescue and Evacuation Plan and include a detailed discussion of the following: methods of rescue; methods of self-rescue; equipment used; training requirement; specialized training for the rescuers; procedures for requesting rescue and medical assistance; and transportation routes to a medical facility. Include the Rescue and Evacuation Plan within the Activity Hazard Analysis (AHA) for the phase of work, in the Fall Protection and Prevention (FP&P) Plan, and the Accident Prevention Plan (APP).

3.5 SCAFFOLDING

A. The Contractor shall provide all employees with a safe means of access to the work area on the scaffold in accordance with **OSHA 29 CFR 1910.28 Safety Requirements For Scaffolding** and as contained in this section.

1. Climbing of any scaffold braces or supports not specifically designed for access is prohibited.

2. Access scaffold platforms greater than 20 feet (6 m) maximum in height by use of a scaffold stair system.

3. Do not use vertical ladders commonly provided by scaffold system manufacturers for accessing scaffold platforms greater than 20 feet (6 m) maximum in height.

4. The use of an adequate gate is required.

5. Ensure that employees are qualified to perform scaffold erection and dismantling.

6. Do not use scaffold without the capability of supporting at least four times the maximum intended load or without appropriate fall protection as delineated in the accepted fall protection and prevention plan.

7. Stationary scaffolds must be attached to structural building components to safeguard against tipping forward or backward.

8. Give special care to ensure scaffold systems are not overloaded. Side brackets used to extend scaffold platforms on self-supported scaffold systems for the storage of material are prohibited.

9. The first tie-in shall be at the height equal to 4 times the width of the smallest dimension of the scaffold base. Place work platforms on mud sills. Scaffold or work platform erectors shall have fall protection during the erection and dismantling of scaffolding or work platforms that are more than six feet. Delineate fall protection requirements when working above six feet or above dangerous operations in the Fall Protection and Prevention (FP&P) Plan and Activity Hazard Analysis (AHA) for the phase of work.

B. Stilts
The use of stilts for gaining additional height in construction, renovation, repair or maintenance work is **PROHIBITED**.

3.6 EQUIPMENT

A. Material Handling Equipment

Material Handling Equipment shall be in accordance with **OSHA 29 CFR 1910.178 Powered Industrial Trucks** and as contained in this section.

1. Material handling equipment such as forklifts shall not be modified with work platform attachments for supporting employees unless specifically delineated in the manufacturer's printed operating instructions.

2. The use of hooks on equipment for lifting of material must be in accordance with manufacturer's printed instructions.

3. Operators of forklifts or power industrial trucks shall be licensed in accordance with OSHA.

B. Weight Handling Equipment

1. Equip cranes and derricks as specified in **ASME B30.5** or **ASME B30.22** or **ASME B30.8** as applicable.

2. Comply with the crane manufacturer's specifications and limitations for erection and operation of cranes and hoists used in support of the work. Perform erection under the supervision of a designated person (as defined in **ASME B30.5**). Perform all testing in accordance with the manufacturer's recommended procedures.

3. Comply with **ASME B30.5** for mobile and locomotive cranes, **ASME B30.22** for articulating boom cranes, ASME B30.3 for construction tower cranes, and **ASME B30.8** for floating cranes and floating derricks.

4. Under no circumstance shall a Contractor make a lift at or above 90% of the cranes rated capacity in any configuration.

5. When operating in the vicinity of overhead transmission lines, operators and riggers shall be alert to this special hazard and follow the requirements of **ASME B30.5** or **ASME B30.22** as applicable.

6. Do not crane suspended personnel work platforms (baskets) unless the Contractor proves that using any other access to the work location would provide a greater hazard to the workers or is impossible. Do not lift personnel with a line hoist or friction crane.

7. Inspect, maintain, and recharge portable fire extinguishers as specified in **NFPA 10, Standard for Portable Fire Extinguishers.**

8. All employees must keep clear of loads about to be lifted and of suspended loads.

9. Use cribbing when performing lifts on outriggers.

10. The crane hook/block must be positioned directly over the load. Side loading of the crane is prohibited.

11. A physical barricade must be positioned to prevent personnel from entering the counterweight swing (tail swing) area of the crane.

12. Certification records which include the date of inspection, signature of the person performing the inspection, and the serial number or other identifier of the crane that was inspected shall always be available for review by CA.

13. Written reports listing the load test procedures used along with any repairs or alterations performed on the crane shall be available for review by CA.

14. Certify that all crane operators have been trained in proper use of all safety devices (e.g. anti-two block devices).

C. USE OF EXPLOSIVES

Explosives shall not be used or brought to the project site without prior written approval from the CA. Such approval shall not relieve the Contractor of responsibility for injury to persons or for damage to property due to blasting operations. Storage of explosives, when permitted on State property, shall be only where

directed and in approved storage facilities. These facilities shall be kept locked at all times except for inspection, delivery, and withdrawal of explosives. Explosive work shall be performed in accordance with the requirements of C.G.S. § 29-343 through 29-355 and as required by the Office of State Fire Marshal, CT Department of Construction Services.

3.7 EXCAVATIONS

A. Perform soil classification by a competent person in accordance with **29 CFR 1926 Safety and Health Regulations for Construction.**

1. Utility Locations
All underground utilities in the work area must be positively identified by and coordinated in accordance with **Division 00, General Conditions, Article 18 Surveys, Permits, And Regulations.** All underground utilities in the work area must be positively identified by a private utility locating service and coordinated with the public utility company. Any markings made during the utility investigation must be maintained by the General Contractor throughout the contract.

2. Utility Location Verification
The Contractor must physically verify underground utility locations by hand digging using wood or fiberglass handled tools when any adjacent construction work is expected to come within three feet of the underground system. Digging within **Two (2) feet (610 mm)** of a known utility must not be performed by means of mechanical equipment; hand digging shall be used. If construction is parallel to an existing utility expose the utility by hand digging every **100 feet (30.5 m)** if parallel within **Five (5) feet (1.5 m)** of the excavation.

3. Shoring Systems
Trench and shoring systems must be identified in the accepted safety plan and AHA. Manufacture tabulated data and specifications or registered engineer tabulated data for shoring or benching systems shall be readily available on-site for review. Job-made shoring or shielding must have the registered professional engineer stamp, specifications, and tabulated data. Extreme care must be used when excavating near direct burial electric underground cables.

4. Trenching Machinery
Operate trenching machines with digging chain drives only when the spotters/laborers are in plain view of the operator. Provide operator and spotters/laborers training on the hazards of the digging chain drives with emphasis on the distance that needs to be maintained when the digging chain is operating. Keep documentation of the training on file at the project site.

3.8 UTILITIES WITHIN CONCRETE SLABS

A. Utilities located within concrete slabs or pier structures, bridges, and the like, are extremely difficult to identify due to the reinforcing steel used in the construction of these structures. Whenever contract work involves concrete chipping, saw cutting, or core drilling, the existing utility location must be coordinated with utility company in addition to a private locating service. Outages to isolate utility systems must be used in circumstances where utilities are unable to be positively identified. The use of historical drawings does not alleviate the contractor from meeting this requirement.

3.9 ELECTRICAL

A. Conduct of Electrical Work
Underground electrical spaces must be certified safe for entry before entering to conduct work. Cables that will be cut must be positively identified and de-energized prior to performing each cut. Positive cable identification must be made prior to submitting any outage request for electrical systems. Arrangements are to be coordinated with the CA and utility company for identification. The CA will not accept an outage request until the Contractor satisfactorily documents that the circuits have been clearly identified. Perform all high voltage cable cutting remotely using hydraulic cutting tool. When racking in or live switching of circuit breakers, no additional person other than the switch operator will be allowed in the space during the actual operation. Plan so that work near energized parts is minimized to the fullest extent possible. Use of electrical outages clear of any energized electrical sources is the preferred method. When working in energized substations, only qualified electrical workers will be permitted to enter. When work requires Contractor to work near energized circuits as defined by the **NFPA 70**, high voltage personnel must use personal protective equipment that includes, as a minimum, electrical hard hat, safety shoes, insulating gloves with leather protective sleeves, fire retarding shirts, coveralls, face shields, and safety glasses. In addition, provide electrical arc flash protection for personnel as required by **NFPA 70E**. Insulating blankets, hearing protection, and switching suits may also be required, depending on the specific job and as delineated in the Contractor's AHA.

B. Portable Extension Cords

Size portable extension cords in accordance with manufacturer ratings for the tool to be powered and protected from damage. Immediately remove from service all damaged extension cords. Portable extension cords shall meet the requirements of **NFPA 70.**

3.10 WORK IN CONFINED SPACES

A. Comply with the requirements in **OSHA 29 CFR 1910.146** and **OSHA 29 CFR 1926.21(b) (6).** Any potential for a hazard in the confined space requires a permit system to be used.

1. Entry Procedures. Prohibit entry into a confined space by personnel for any purpose, including hot work, until the qualified person has conducted appropriate tests to ensure the confined or enclosed space is safe for the work intended and that all potential hazards are controlled or eliminated and documented. All hazards pertaining to the space shall be reviewed with each employee during review of the AHA.

2. Forced air ventilation is required for all confined space entry operations and the minimum air exchange requirements must be maintained to ensure exposure to any hazardous atmosphere is kept below its' action level.

3. Sewer wet wells require continuous atmosphere monitoring with audible alarm for toxic gas detection.

END OF SECTION 01 35 26

(B L A N K P A G E)

ADDENDUM 2, Item 3

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The Construction Documents, consisting of Drawings, Specifications, and general provisions of the Contract, including Division 00 General and Supplementary Conditions and other Division 01 Specification Sections, are complimentary; they include and apply to this Section.

1.2 DEFINITIONS

A. General: Basic contract definitions are included in the General Conditions of the Contract for Construction.

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

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

D. "Approved": The term "approved," when used in conjunction with the Architect's action on the Contractor's submittals, applications, and requests, is limited to the Architect's duties and responsibilities as stated in the Conditions of the Contract.

E. "Regulations": The term "regulations" includes laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, as well as rules, conventions, and agreements within the construction industry that control performance of the Work.

F. "Furnish": The term "furnish" means supply and deliver to the Project Site, ready for unloading, unpacking, assembly, installation, and similar operations.

G. "Install": The term "install" describes operations at the Project Site including the actual unloading, unpacking, assembly, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.

H. "Provide": The term "provide" means to furnish and install, complete and ready for the intended use.

I. "Installer": An installer is the Subcontractor or another entity engaged by the C, either as an employee, subcontractor, or contractor of lower tier, to perform a particular construction activity, including installation, erection, application, or similar operations. Installers are required to be experienced in the operations they are engaged to perform.

1. The term "experienced," when used with the term "installer," means having a minimum of five (5) previous projects similar in size and scope to this Project, being familiar with the special requirements indicated, and having complied with requirements of authorities having jurisdiction.

2. Trades: Using terms such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespersons of the corresponding generic name.

3. Assigning Specialists: Certain Sections of the Specifications require that specific construction activities shall be performed by specialists who are recognized experts in those operations. The specialists must be engaged for those activities, and their assignments are requirements over which the has no option. However, the ultimate responsibility for fulfilling contract requirements remains with the Contractor.

a. This requirement shall not be interpreted to conflict with enforcing building codes and similar regulations governing the Work. It is also not intended to interfere with local trade-union jurisdictional settlements and similar conventions.

J. "Project Site" is the space available to the for performing construction activities, either exclusively or in conjunction, with others performing other Work as part of the Project. The extent of the Project Site is shown on the Drawings and may or may not be identical with the description of the

land on which the Project is to be built.

K. "Testing Agencies": A testing agency is an independent entity engaged to perform specific inspections or tests, either at the Project Site or elsewhere, and to report on and, if required, to interpret results of those inspections or tests.

1.3 SPECIFICATION FORMAT AND CONTENT EXPLANATION

A. Specification Format: These Specifications are organized into Divisions and Sections based on CSI's "MasterFormat" 49-Division format and numbering system.

B. Specification Content: This Specification uses certain conventions regarding the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations or circumstances. These conventions are explained as follows:

1. Abbreviated Language: Language used in Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be interpolated, as the sense requires. Singular words will be interpreted as plural and plural words interpreted as singular where applicable as the context of the Contract Documents indicates.

2. Streamlined Language: The Specifications generally use the imperative mood and streamlined language. Requirements expressed in the imperative mood are to be performed by the Contractor. At certain locations in the Text, subjective language is used for clarity to describe responsibilities that must be fulfilled indirectly by the or by others when so noted.

a. The words "shall be" are implied where a colon (:) is used within a sentence or phrase.

1.4 INDUSTRY STANDARDS

A. Applicability of Standards: Except where 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 the standards in effect as of the date of the Contract Documents unless a specific date is indicated in the Contract Documents or the governing regulations cited herein.

C. Conflicting Requirements: Where compliance with two (2) or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent and highest quality requirement. Request a decision from the Architect before proceeding on requirements that are different but apparently equal, and where it is uncertain which requirement is the most stringent.

1. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum acceptable. 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 the requirements. Request a clarification from the Architect regarding uncertainties before proceeding.

D. Copies of Standards: Each entity engaged in construction on the Project is required to 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, the shall obtain copies directly from the publication source.

E. Abbreviations and Names: Trade association names and titles of general standards are frequently abbreviated. Where such acronyms or abbreviations are used in the Specifications or other Contract Documents, they mean the recognized name of the trade association, standards-generating organization, authorities having jurisdiction, or other entity applicable to the context of the text provision. Refer to Thompson Gale's "Encyclopedia of Associations," available in most libraries.

1.5 GOVERNING REGULATIONS AND AUTHORITIES

A. Copies of Regulations: Obtain copies of the “latest applicable State Codes and Regulations” and

the following regulations and retain at the Project Site to be available for reference by parties who have a reasonable need during submittals, planning, and progress of the Work, until Substantial Completion.

1. Connecticut State Building Code – 2018, inclusive of all amendments to the following:
   a. International Building Code - 2015.
   b. International Existing Building Code - 2015.
   c. International Mechanical Code - 2015.
   d. International Plumbing Code - 2015.
   e. International Energy Conservation Code - 2015.
   f. National Electric Code (NFPA 70) - 2017.
   g. ICC/ANSI A117.1-Accessible and Usable Buildings and Facilities - 2009.
2. Connecticut Fire Safety Code - 2018.
   a. International Fire Code - 2015.
   b. NFPA 101 - 2015.
3. Connecticut Fire Prevention Code - 2018.
   a. NFPA 1 - 2015.
4. Occupational Safety and Health Administration (OSHA)
   a. OSHA 29 CFR Part 1910 Occupational Safety and Health Regulations - 2007.
   b. OSHA 29 CFR Part 1926 Occupational Safety and Health Regulations for Construction - 2007.

B. For a list of the "latest applicable State Codes and Regulations" and how they can be obtained see http://www.ct.gov/dcs (Connecticut Department of Administrative Services – Division of Construction Services website) and click on "Office of State Building Inspector". Also visit the www.ctdol.state.ct.us Connecticut Department of Labor website.

1.6 SUBMITTALS

A. Permits, Licenses, and Certificates: For the 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.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION (NOT APPLICABLE)

END OF SECTION 01 42 20

ADDENDUM 2, Item 3

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ADDENDUM 2, Item 3

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

1. The Construction Documents, consisting of Drawings, Specifications, and general provisions of the Contract, including Division 00 General and Supplementary Conditions and other Division 01 Specifi-cation Sections, are complimentary; they include and apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for quality-control services.

B. Quality-Control services include fire alarm acceptance testing, inspections, tests, and related actions, including reports performed by Contractor, by independent agencies, and by governing authorities. They do not include contract enforcement activities performed by the Owner.

C. Inspection and testing services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with Contract Document requirements.

D. Requirements of this Section relate to customized fabrication and installation procedures, not production of standard products.

1. Specific quality-control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.

2. Specified inspections, tests, and related actions do not limit Contractor's quality-control procedures that facilitate compliance with Contract Document requirements.

3. Requirements for Contractor to provide quality-control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

E. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 01 Section 01 33 00 "Submittal Procedures" specifies requirements for development of a schedule of required tests and inspections.

2. Division 01 Section 01 73 29 "Cutting and Patching- " specifies requirements for repair and restoration of construction disturbed by inspection and testing activities.

3. Division 01 Section 01 77 00 "Closeout Procedures- ", specific requirements for contract closeout procedures.

4. Division 28 Section 28 31 00 "Fire Detection and Alarm- " specifies field quality control for the Alarm System.

1.3 RESPONSIBILITIES

A. Contractor Responsibilities: Unless otherwise indicated as the responsibility of another identified entity, the Owner, through the Construction Administrator, shall provide inspections, tests, and other quality-control services specified elsewhere in the Contract Documents and required by authorities having jurisdiction. All tests required by the individual specification sections are required to be scheduled and notification given to the Construction Administrator 24/48 hours in advance of the test/inspection as applicable. Costs for these services are not included in the Contract Sum.

1. Where individual Sections specifically indicate that certain inspections, tests, and other quality-control services are the Contractor's responsibility, the Contractor shall employ and pay a qualified independent testing agency to perform quality-control services. Costs for these services are included in the Contract.

2. Where individual Sections specifically indicate that certain inspections, tests, and other quality-control services are the Owner's responsibility, the Owner will employ and pay a qualified independent testing agency to perform those services.

a. Such services include Special Inspections as required by the latest edition of the "Connecticut State Building Code".

b. Where the Owner has engaged a testing agency for testing and inspecting part of the

Work, and the Contractor is also required to engage an entity for the same or related element, the Contractor shall not employ the entity engaged by the Owner. The Owner will engage the services of a qualified Special Inspector for this project. The Special Inspector, as a representative of the Owner, shall document and confirm compliance with the provisions of the Connecticut State Building Code for Special Inspections.

c. Materials and assemblies for this project will be tested and construction operations inspected as the work progresses. Failure to detect any defective work or material shall not in any way prevent later rejection when such defect is discovered, nor shall it obligate the State for final acceptance.

d. The Owner's use of testing and inspection services shall in no way relieve the Contractor of the responsibility to furnish materials and finished construction in full compliance with the Contract Documents and the Connecticut State Building Code.

B. Retesting: The Contractor is responsible for retesting where results of inspections, tests, or other quality-control services prove unsatisfactory and indicate noncompliance with Contract Document requirements, regardless of whether the original test was Contractor 's responsibility.

1. The cost of retesting construction, revised or replaced by the Contractor, is the Contractor's responsibility where required tests performed on original construction indicated non-compliance with Contract Document requirements.

2. The Owner will issue a credit change order to cover all costs incurred related to all re-tests/re-inspections due to non-compliance to the Contract Documents, including but not limited to the Owner's costs and the Consultant's costs.

C. Associated Services: Cooperate with agencies performing required inspections, tests, and similar services, and provide reasonable auxiliary services as requested. Notify the Agency sufficiently in advance of operations to permit assignment of personnel. Auxiliary services required include, but are not limited to, the following:

1. Provide access to the Work.

2. Furnish incidental labor and facilities necessary to facilitate inspections and tests.

3. Take adequate quantities of representative samples of materials that require testing or assist the agency in taking samples.

4. Provide facilities for storage and curing of test samples.

5. Deliver samples to testing laboratories.

6. Provide an approved design mix proposed for use for material mixes that require control by the testing agency.

7. Provide security and protection of samples and test equipment at the Project Site.

D. Duties of the Testing Agency: The independent testing agency engaged to perform inspections, sampling, and testing of materials and construction specified in individual Sections shall cooperate with the Construction Administrator, Architect and the Contractor in performance of the testing agency's duties. The testing agency shall provide qualified personnel to perform required inspections and tests.

1. The testing agency shall notify the Construction Administrator and the Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.

2. The testing agency is not authorized to release, revoke, alter, or enlarge requirements of the Contract Documents or approve or accept any portion of the Work.

3. The testing agency shall not perform any duties of the Contractor.

E. Owner will pay for the services of an independent testing agency laboratory to perform inspections, tests and other services required by the Specifications except as noted below, listed for which the Owner will issue a deduct change order to cover the cost associated with these tests:

1. When the Contractor notifies the Construction Administrator and/or Testing Agency less than 24 hours before the expected time of testing.

2. When the Contractor requires testing for his own convenience.

3. When the Contractor schedules a test and is not ready for the required test.

F. Submit reports of tests that are part of the submittal requirements which indicate compliance or non-compliance with the specified standard.

G. See also Division 00 General Conditions of the Contract for Construction, “Inspections & Tests".

H. Fire Alarm/Acceptance Testing Procedures:

1. For buildings exceeding the threshold limit, the fire alarm testing shall be as the authority having jurisdiction shall dictate. This will be as determined by the State Fire Marshals Office.

2. For buildings that do not exceed the threshold limit, the fire alarm testing shall be as the authority having jurisdiction shall dictate. This will be determined by the Department of Construction Services requirements as set below:

a. Protective Signaling Systems: All protective signaling systems shall meet with acceptance testing requirements of the applicable standards listed in Section 7-6.1.4, NFPA 101/2003 and NFPA 13/2002.

b. Prior Test Notification: At least five (5) working days prior to testing, the Fire Alarm, Contractor shall notify (in writing) the following people of the proposed date the acceptance tests are to be performed (Also, see Part 2 of Certificate of Compliance).

c. Department of Construction Services Team Representative

d. Contractor.

e. Engineer of Record.

f. Equipment Supplier Representative.

g. Sprinkler Contractor.

h. Certificates of Compliance:

1) A Fire Alarm System Inspection and Testing Certification and Description form shall be prepared for each system (See NFPA 72/2002 Chapter 7 and Figure 7-5.2.2).

2) Parts 1 and 3 through 9, shall be completed after the system is installed and the installation of the wiring has been checked. Every alarm device must also be pre-tested to ensure proper operation and correct annunciation at each remote annunciator and control panel. Part 1 of the form (Certification of System Installation) shall be signed by the fire alarm contractor. The signed and completed preliminary copies of the Certification form shall be forwarded to all parties along with the Prior Test Notification.

3) Part 2, of each applicable form, shall be completed after the operational tests have been completed.

4) After the completion of the operational acceptance tests and sign-off of test witness (with stipulations noted), final copies of the Certificates shall be forwarded to the Department of Construction Services Representatives.

i. Tests:

1) All tests shall be conducted in accordance with the Manufacturer’s Testing Recommendations.

2) All testing equipment, apparatus (i.e. sound level decibel meter, 2-way radio communication, test devices, ladders, tools, lighting, etc.) and personnel shall be supplied by the Fire Alarm Contractor and Sprinkler Contractor.

j. System Documentation: Every system shall include the following documentation, which shall be delivered to the Department of Construction Services Representatives upon final acceptance of the system. An owner's manual or manufacturer's installation instructions covering all system equipment, including the following:

1) A detailed narrative description of the system inputs, evacuation signaling, ancillary functions, annunciation, intended sequence of operations, expansion capability, application considerations, and limitations.

2) Operator’s instructions for basic systems operations including alarm

acknowledgment, system reset, interpreting system output (LED's CRT display, and printout), operation of manual evacuation signaling and ancillary function controls, changing printer paper, etc.

3) A detailed description of routine maintenance and testing as required and recommended and as would be provided under a maintenance contract, including testing and maintenance instructions for each type of device installed. This information should include:

a) A listing of individual system components that require periodic testing and maintenance.

b) Step by step instructions detailing the requisite testing and maintenance procedures and the intervals at which those procedures should be performed.

c) A schedule that correlates the testing and maintenance procedures required by paragraph (2) above and with the listing required by paragraph (1) above.

d) Detailed troubleshooting instructions for each type of trouble condition recognized by the system, including opens, grounds, parity errors, "loop failures," etc. These instructions should include a list of all trouble signals, and step by step instructions describing how to isolate those problems and correct them (or call for service as appropriate).

e) A service directory, including a list of names and telephone numbers for those who should be called to service the system.

4) As-Built Drawings:

a) The Contractor will produce two (2) sets of as-built drawings and specifications for the fire alarm system, indicating the location (and programmed address, if applicable) of all devices and appliances, the wiring sequences, wiring methods, connection of the components, and sequence of operation of the protective signaling system as installed, shall be given to CT DCS representatives. This shall be in Accordance with NFPA 72. Refer also to Section 01 77 00 "Closeout Procedures".

1.4 SUBMITTALS

A. Unless the Contractor is responsible for this service, the independent testing agency shall submit a certified written report, in duplicate, of each inspection, test, or similar service to the Construction Administrator. If the Contractor is responsible for the service, submit a certified written report, in duplicate, of each inspection, test, or similar service through the Contractor.

1. Submit additional copies of each written report directly to the governing authority, when the authority so directs.

2. Report Data: Written reports of each inspection, test, or similar service include, but are not limited to, the following:

a. Date of issue.

b. Project title and number.

c. Name, address, and telephone number of testing agency.

d. Dates and locations of samples and tests or inspections.

e. Names of individuals making the inspection or test.

f. Designation of the Work and test method.

g. Identification of product and Specification Section.

h. Complete inspection or test data.

i. Test results and an interpretation of test results.

j. Ambient conditions at the time of sample taking and testing.

k. Comments or professional opinion on whether inspected or tested Work complies with Contract Document requirements.

l. Name and signature of laboratory inspector.

m. Recommendations on re-testing.

1.5 QUALITY ASSURANCE

A. Qualifications for Service Agencies: Engage inspection and testing service agencies, including independent testing laboratories, that are pre-qualified as complying with the National Voluntary Laboratory Accreditation Program and that specialize in the types of inspections and tests to be performed.

1. Each independent inspection and testing agency engaged on the Project shall be authorized by authorities having jurisdiction to operate in the state where the Project is located.

B. Mockups: Provide full-size, physical assemblies that are constructed on-site. Mockups will be used to verify selections made under sample submittals, to demonstrate aesthetic effects and, where indicated, qualities of materials and execution, and to review construction, coordination, testing, or operation; they are not samples. Approved mockups establish the standard by which the Work will be judged.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION

3.6 MOCKUPS

A. Build site-assembled mockups using installers who will perform same tasks for project.

B. 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.

2. Notify Architect and Construction Administrator seven (7) 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 Administrator 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.

3.7 REPAIR AND PROTECTION

A. General: Upon completion of inspection, testing, sample taking and similar services, repair damaged construction and restore substrates and finishes. Comply with Contract Document requirements for Division 01 Section 01 73 29 "Cutting and Patching."

B. Protect constructions exposed by or for quality-control service activities and protect repaired construction.

C. Repair and protection is Contractor's responsibility, regardless of the assignment of responsibility for inspection, testing, or similar services.

END OF SECTION 01 45 00

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ADDENDUM 2, Item 3

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including Division 00 General Conditions of the Contract for Construction for Design-Bid-Build and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes requirements for identification badges, parking stickers, construction facilities and temporary controls, including temporary utilities, support facilities, and security and protection.

B. Temporary utilities include, but are not limited to, the following:

1. Temporary water service and distribution.
2. Temporary electric power and lighting services.
3. Temporary heating, cooling and ventilation
4. Temporary telephone service and data.
5. Temporary sanitary facilities, including drinking water.
6. Storm and sanitary sewer.
7. Storm water pollution control.

C. Support facilities include, but are not limited to, the following:

1. Field offices – Contractor, Subcontractor, Owner, and Construction Administrator.
2. Storage and fabrication sheds.
3. Temporary roads and paving.
4. Dewatering facilities and drains.
5. Temporary enclosures.
6. Temporary lifts, hoists and elevator use.
7. Temporary project identification signs.
8. Temporary exterior lighting.
9. Collection and disposal of waste and cleaning.
10. Temporary Environmental Controls.
11. Stairs.

D. Security and protection facilities include, but are not limited to, the following:

1. Temporary fire protection.
2. Permanent fire protection.
3. Security for site and Agency.
4. Barricades, warning signs, and lights.
5. Enclosure fence.
6. Security enclosure and lockup.
7. Protection.
8. Environmental protection.
9. Traffic ways.

10. Identification badges for Contractor's personnel & parking stickers.

1.3 SUBMITTALS

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

B. **Implementation and Termination Schedule:** Within **twenty-one (21)** days of the date established for commencement of the Work, submit a schedule indicating implementation and termination of each temporary utility.

1.4 QUALITY ASSURANCE

A. **Regulations:** Comply with industry standards and applicable laws and regulations of authorities having jurisdiction including, but not limited to, the following:

1. Building and fire code requirements.

2. Health and safety regulations.

3. Utility company regulations.

4. Police, fire department, and rescue squad rules.

5. Environmental protection regulations.

6. Americans with Disabilities Act.

B. **Standards:** OSHA. Comply with NFPA 241 "Standard for Safeguarding Construction, Alteration, and Demolition Operations," ANSI A10 Series standards for "Safety Requirements for Construction and Demolition," and NECA 200 "Recommended Practice for Installing and Maintaining Temporary Electric Power at Construction Sites."

1. **Electrical Service:** Comply with NEMA, NECA, and UL standards and regulations for temporary electric service. Install service in compliance with NFPA 70 "National Electric Code."

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

1.5 PROJECT CONDITIONS

A. **Temporary Utilities:** Prepare a schedule indicating dates for implementation and termination of each temporary utility. At the earliest feasible time, when acceptable to the Owner, the Construction Administrator will direct the change over from use of temporary service to use of permanent service.

B. **Conditions of Use:** Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Relocate temporary services and facilities as the Work progresses. Do not overload facilities or permit them to interfere with progress. Take necessary fire-prevention measures. Do not allow hazardous, dangerous, or unsanitary conditions, or public nuisances to develop or persist on-site.

PART 2 - PRODUCTS

2.1 MATERIALS

A. **General:** Provide new materials. If acceptable to the Architect, the Contractor may use undamaged, previously used materials in serviceable condition. Provide materials suitable for use intended.

B. **Lumber and Plywood:** Comply with requirements in Division 06 Section 06 10 00 "Rough Carpentry."

1. For signs and directory boards, provide 3/4-inch exterior grade, Grade A-B Fir plywood. Mount sign on preservative treated Fir posts.

a. Project sign shall be 4' x 8' painted and supported on 4-inch x 4-inch posts, of a design to be provided by the Owner via the Construction Administrator.

2. **Vision Barriers:** Provide minimum 1/2-inch thick exterior plywood.

3. For safety barriers, sidewalk bridges, and similar uses, provide minimum 5/8-inch thick exterior

plywood.

C. **Paint:** Comply with requirements of Division 09 Section 09 91 00 "Painting."

1. For sign and directory boards applying graphics, provide exterior-grade alkyd gloss enamel over exterior primer unless otherwise indicated.

D. **Tarpaulins:** Provide waterproof, fire-resistant, UL-labeled tarpaulins with flame-spread rating of 15 or less. For temporary enclosures, provide translucent, nylon-reinforced, laminated polyethylene or polyvinyl chloride, fire-retardant tarpaulins.

E. **Water:** Provide potable water approved by local health authorities.

2.2 EQUIPMENT

A. **General:** Provide new equipment. If acceptable to the Architect, the Contractor may use undamaged, previously used equipment in serviceable condition. Provide equipment suitable for use intended.

1. The Contractor shall furnish tools, apparatus and appliances, hoists and/or cranes and power for same, scaffolding, runways, ladders, temporary supports and bracing and similar work or material necessary to insure convenience and safety in the execution of the Contract except where this is otherwise specified in any Specification Section. All such items shall meet the approval of the Owner but responsibility for design, strength and safety shall remain with the Contractor. All such items shall comply with Federal OSHA regulations and applicable codes, statutes, rules and regulations, including compliance with the requirements of the current edition of the "Manual of Accident Prevention in Construction" published by the Associated General Contractors (AGC) and the standards of the State Labor Department.

2. Staging, exterior and interior, required for the execution of this Contract, shall be furnished, erected, relocated if necessary and removed by the Contractor. Staging shall be maintained in a safe condition without charge to and for the use of all trades as needed.

B. **Water Hoses:** Provide 3/4-inch, heavy-duty, abrasion-resistant, flexible rubber hoses with pressure rating greater than the maximum pressure of the water distribution system. Provide adjustable shutoff nozzles at hose discharge and backflow preventers.

C. **Electrical Outlets:** Provide properly configured, NEMA-polarized outlets to prevent insertion of 110- to 120-Volt plugs into higher voltage outlets. Provide receptacle outlets equipped with ground-fault circuit interrupters, reset button, and pilot light for connection of power tools and equipment.

D. **Electrical Power Cords:** Provide grounded extension cords. Use hard-service cords where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.

E. **Lamps and Light Fixtures:** Provide general service incandescent lamps of wattage required for adequate illumination. Provide guard cages or tempered-glass enclosures where exposed to breakage. Provide exterior fixtures where exposed to moisture.

F. **Heating Units:** Provide temporary heating units that have been tested and labeled by UL, FM, or another recognized trade association related to the type of fuel being consumed.

G. **Temporary Field Offices:** Provide prefabricated or mobile units with lockable entrances, operable windows, and serviceable finishes. Provide heated and air-conditioned units on foundations adequate for normal loading.

H. **Temporary Toilet Units:** Provide self-contained, single-occupant toilet units of the chemical, aerated recirculation, or combustion type. Provide units properly vented and fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material.

I. **Fire Extinguishers:** Provide hand-carried, portable, UL-rated, Class A fire extinguishers for temporary offices and similar spaces. In other locations, provide hand-carried, portable, UL-rated, Class ABC, dry-chemical extinguishers or a combination of extinguishers of NFPA-recommended classes for the exposures.

1. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Use qualified personnel for installation of temporary facilities. Locate facilities where they will serve the Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.

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

C. Storm Water Pollution Control:

1. The **Architect/Engineer** shall electronically register the Connecticut Department of Energy and Environmental Protection's (DEEP) "General Permit for the Discharge of Stormwater and Dewatering Wastewater from Construction Activities" (DEEP-WPED-GP-015) and Stormwater Pollution Control Plan (SPCP) through the **DEEP ezFile Portal**. The SPCP is attached to technical Section 31 20 05 "Sedimentation and Erosion Control".

2. Once under contract, and prior to construction activities, the Contractor shall assume responsibility for storm water pollution control and conform to the General Permit obligations and requirements. The Contractor shall sign, and cause to be signed by each appropriate Subcontractor, the "Contractor Certification Statement" section of the SPCP and the DEEP "License Transfer Form" (DEEP-APP-006), as directed by the Architect/Engineer. The signed Certification Statement and License Transfer Form shall be attached to the "on-site" SPCP and submitted to the DEEP by the Architect/Engineer.

3. The Owner shall be responsible for the General Permit registration fee and License Transfer notification fee.

4. The Contractor shall retain an updated copy of the SPCP at the construction site from the date construction is initiated at the site until the date construction at the site is completed.

5. The Contractor shall conform to the SPCP or use another plan, prepared at the Contractor's expense, which has been approved by the Owner and the DEEP *prior to construction activities*. The Contractor shall be responsible for implementing, maintaining, and updating the SPCP, including, but not limited to, performing regular inspections, conducting and reporting all stormwater monitoring activities, retaining records for the required period of time, and performing ***all*** post-construction measures and inspections.

6. The Contractor shall ensure all post-construction measures are installed, cleaned, and functioning and the site has been stabilized for at least **three (3) months** following the cessation of construction activities in order for the project to be considered complete. A site is considered stabilized when there is no active erosion or sedimentation present and no disturbed areas remain exposed for **all phases**. Once the site has been stabilized for at least three (3) months, the Contractor shall have the site inspected by a Qualified Inspector to confirm final stabilization. If stabilized, the Contractor shall submit a Notice of Termination (DEP-PED-NOT-015) to the DEEP in order to terminate the Construction Stormwater General Permit.

7. The Contractor shall submit a final copy of the SPCP, the Notice of Termination, and all inspection records to the Architect/Engineer and DAS/CS Project Manager at completion of all post-construction measures.

8. The Contractor shall retain copies of the SPCP and all reports required by the General Permit, and records of all data used to complete the registration for the General Permit, for a period of at least five (5) years from the date that the project is complete. Inspection records must be retained as part of the SPCP for a period of five (5) years after the date of inspection.

9. For sites involving total soil disturbance of less than one (1) acre, the Contractor shall be responsible for sediment and erosion control and utilize best management practices as identified in the "2002 Connecticut Guidelines for Soil Erosion and Sediment Control" (DEEP Bulletin 34), as amended, and any sediment and erosion control plans prepared for the project.

3.2 TEMPORARY UTILITY INSTALLATION

A. **General:** Engage the appropriate local utility company to install temporary service or connect to existing service. Where company provides only part of the service, provide the remainder with matching, compatible materials and equipment. Comply with company recommendations.

1. Arrange with company and existing users for a time when service can be interrupted, if necessary, to make connections for temporary services.
2. Provide adequate capacity at each stage of construction. Prior to temporary utility availability, provide trucked-in services.
3. Obtain easements to bring temporary utilities to the site where the Owner's easements cannot be used for that purpose.
4. **Use Charges:** If cost or use charges for temporary facilities are specified by this section to be borne by the Owner the cost or use charges for temporary facilities will be borne not longer than **thirty (30)** days after final acceptance of the project.

B. Temporary Water Service and Distribution:

1. Install water service and distribution piping of sizes and pressures adequate for construction until permanent water service is in use.
   a. **Sterilization:** Sterilize temporary water piping prior to use.
2. Water for construction purposes may be taken from the existing service. The Contractor shall provide connections, approved backflow prevention device, meter and pipe to the water main or nearest hydrant, subject to the approval of the Owner. Upon completion of work, the Contractor shall remove the temporary connections and backfill if necessary. If new water service is installed before construction is complete, the new system may be used provided it is returned to the Owner in as-new condition. The Contractor shall pay for the water used, as metered.

C. Temporary Electric Power and Lighting Services:

1. Power and lighting may be taken from the power company's nearest pole with temporary poles, if needed, to extend the line to project. If permanent power lines have been installed before beginning project, then temporary lines can be brought in from the last pole.
2. Provide service required for construction with branch wiring and distribution boxes located to provide power and lighting by construction-type extension cords. Meter shall be provided and installed by the Contractor.
3. The Contractor shall pay all costs of temporary power and light.
4. **Power Distribution System:** Install wiring overhead and rise vertically where least exposed to damage. Where permitted, wiring circuits not exceeding 125 Volts, ac 20 Ampere rating, and lighting circuits may be nonmetallic sheathed cable where overhead and exposed for surveillance.
5. **Temporary Lighting:** When overhead floor or roof deck has been installed, provide temporary lighting with local switching. Install and operate temporary lighting that will fulfill security and protection requirements without operating the entire system. Provide temporary lighting that will provide adequate illumination for construction operations and traffic conditions.

D. Temporary Heating, Cooling and Ventilating:

1. Provide temporary heat required by construction activities for curing or drying of completed installations or for protection of installed construction from adverse effects of low temperatures or high humidity. Select safe equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce the ambient condition required and minimize consumption of energy.
   a. **Heating Facilities:** Except where the Owner authorizes use of the permanent system, provide vented, self-contained, LP-gas or fuel oil heaters with individual space thermostatic control.

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

2. HVAC Equipment:

a. The Contractor's use of the HVAC system during construction is prohibited. The Contractor shall provide and pay for supplemental devices, as needed, to maintain specified conditions during the Work and in such a manner as to prevent damage to the existing(s) building or new building(s) and their systems.

b. The Contractor shall change all HVAC filters in existing system serving area of Work at end of Project.

3. Provide temporary heat during construction for interior areas included in the Contract to counteract low temperatures or excessive dampness. Maintain during said period or periods until final completion of the Contract, unless otherwise approved by the Owner in writing. Windows, doors, ventilators and similar openings shall be temporarily closed. Provide heat and ventilation to maintain specified conditions for construction operations and to protect materials and finishes from damage by temperature or humidity. The permanent heating system is not to be used for temporary heating unless approved, in writing, by the Owner. If approved, use of the permanent heating system by the Contractor does not constitute beneficial use by the Owner. The warrantee for said system will not commence until Substantial Completion is granted. Costs shall be paid by the Contractor. See individual Sections for temperature/humidity limits. Temporary heating methods shall comply with OSHA regulations and other applicable codes, statutes, rules and regulations and shall be approved by the Architect/Engineer and Owner.

E. **Temporary Telephone Service and Data:** Provide temporary data service throughout the construction period for all personnel engaged in construction activities. Install data for each temporary office and telephone service with 911 recognition at the first aid station. It is preferred that the Contractor use a cellular phone. Basic service and local calls will be paid for by the Contractor. Toll calls will be paid for by the respective users.

1. Proximate to each office data port, post a list of important telephone numbers.

F. **Temporary Sanitary Facilities, Including Drinking Water:** Temporary sanitary facilities include temporary toilets, wash facilities, and drinking-water fixtures. Comply with regulations and health codes for the type, number, location, operation, and maintenance of fixtures and facilities. Install where facilities will best serve the Project's needs.

1. Provide toilet tissue, wash basins with water, soap and paper towels, paper cups, and similar disposable materials for each facility. Provide covered waste containers for used material. The Contractor shall maintain the facilities in a sanitary condition.

2. **Toilets:** The Contractor shall install self-contained chemical toilet units. Shield toilets to ensure privacy. Use of pit-type privies will not be permitted. Provide separate facilities for male and female personnel.

3. **Water Coolers:** Where power is accessible, provide electric hot/cold water coolers to maintain dispensed cold water temperature at 45 to 55 degrees F. Provide bottled water service and cup supplies and maintain in a clean sanitary condition.

G. **Storm and Sanitary Sewer:** If sewers are available, provide temporary connections to remove effluent that can be discharged lawfully.

1. Filter out excessive amounts of soil, construction debris, chemicals, oils, and similar contaminants that might clog sewers or pollute waterways before discharge.

2. Connect temporary sewers to the municipal system, as directed by sewer department officials.

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

H. **Storm Water Pollution Control:** Provide earthen embankments and similar barriers in and around excavations and sub-grade construction, sufficient to prevent flooding by runoff of storm water from heavy rains.

3.3 SUPPORT FACILITIES INSTALLATION

A. General: Locate field offices, storage sheds, and other temporary construction and support facilities in designated area as shown on the Contract Documents. The location of the trailers on the Drawings is diagrammatic in nature. Final placement of the trailers is to be approved by the Construction Administrator.

1. Maintain support facilities until Final Completion. Remove prior to Final Completion with permission from the Owner.

B. Contractor Field Offices: Provide insulated, weathertight temporary offices of sufficient size to accommodate Contractors' required office personnel at the Project Site. Keep all offices clean and orderly, sweep weekly and remove rubbish on a daily basis. Furnish and equip offices as follows:

1. The Contractor shall provide an office for their own use and a method to contact them by e-mail and telephone at any point and time.
2. Field Office Internet Service: The Contractor shall provide broadband internet service for the field office. Broadband internet service shall be capable of a minimum average upload speed of 100Mbps unless otherwise approved by the Owner.
3. When the Contractor supplies the trailer(s) they shall equip each trailer with a water cooler for hot and cold water.

C. Owner's Field Offices: the Owner and Construction Administrator will maintain a site office within the school during the duration of the construction time.

1. Provide a copier with consumables, and maintenance for the duration of the project.
   a. Provide a Canon Image Runner Advance C35301 with functionality to copy, scan, send, and print in color and black-and-white in 8.5x11 and 11x17 formats.
   b. Maintenance and consumables are understood to include ink cartridges and paper.
~~1.~~2. [i]Provide a 5 gallon water cooler with monthly water service and paper cups for the duration of the Project.

D. [ii]Storage and Fabrication Sheds: Install storage and fabrication sheds sized, furnished, and equipped to accommodate materials and equipment involved, including temporary utility service. Sheds may be open shelters or fully enclosed spaces within the building or elsewhere on-site.

1. Storage sheds for tools, materials and equipment shall be weathertight with heat, lighting and ventilation for products requiring controlled conditions.
2. Remove temporary materials, equipment services and construction before Substantial Completion.
3. Clean and repair damage caused by installation or use of temporary facilities. Restore existing facilities used during construction to specified or original condition.

E. Temporary Roads and Paving: Construct and maintain temporary roads and paving to support the indicated loading adequately and to withstand exposure to traffic during the construction period. Locate temporary paving for roads, storage areas, and parking where the same permanent facilities will be located. Review proposed modifications to permanent paving with the Construction Administrator and Architect.

1. Provide paving for pedestrian access and parking for field offices.
2. Paving: Comply with Division 32 Section 32 12 16 "Asphalt Paving" for construction and maintenance of temporary paving.
3. Coordinate temporary paving development with sub-grade grading, compaction, installation and stabilization of sub-base and installation of base and finish courses of permanent paving.
4. Install temporary paving to minimize the need to rework the installations and to result in permanent roads and paved areas without damage or deterioration when occupied by the Owner.
5. Extend temporary paving in and around the construction area as necessary to accommodate

delivery and storage of materials, equipment usage, administration, and supervision.

F. **Dewatering Facilities and Drains:** For temporary drainage and dewatering facilities and operations not directly associated with construction activities included under individual Sections, comply with dewatering requirements of applicable Division 31 Sections. Where feasible, utilize the same facilities. Maintain the site, excavations, and construction free of water.

G. **Temporary Enclosures**: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities.

1. Where heat is needed and the permanent building enclosure is not complete, provide temporary enclosures where there is no other provision for containment of heat. Coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions and effects.
2. Install tarpaulins securely, with incombustible wood framing and other materials. Close openings of 25-sq ft or less with plywood or similar materials.
3. Close openings through floor or roof decks and horizontal surfaces with load-bearing, wood-framed construction.
4. Where temporary enclosure exceeds 100-sq ft in area, use UL-labeled, fire-retardant-treated material for framing and main sheathing.

H. Temporary Lifts, Hoists and Elevator Use:

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

I. **Temporary Project Identification Signs:** Prepare project identification and other signs of size indicated. Install signs where indicated to inform the public and persons seeking entrance to the Project. Support on posts or framing of preservative-treated wood or steel. Do not permit installation of unauthorized signs.

1. **Project Sign:** Engage an experienced sign painter to apply graphics. Comply with details to be furnished by the Construction Administrator.
   a. **Temporary Tripod Frame**: For groundbreaking ceremonies only, provide a temporary tripod for the sign illustrated and described below. Make the tripod of 12 ft long 2" x 4"s (Stud Grade), beveled and bolted at the top. Provide approximately 5-ft between legs at grade. Provide a 6-ft long, 2" x 4" seat for the sign; locate 5-ft above grade and nail in place. Nail sign at four (4) places where edges intersect tripod legs. Drive a 24" long, pointed 2" x 4" stake into the earth next to each leg and nail to legs.
   b. **Project Sign:** The Contractor shall contact the Construction Administrator for the proper wording for the project sign. Fabricate sign of 3/4" Exterior Grade A-B Fir plywood. Mount sign on preservative treated Fir posts. The Owner shall provide design, color selection and illustration of the Project Sign. Paint both sides and all edges of sign and the posts with two (2) coats of exterior, white, alkyd primer. Paint the border and letters with "bulletin" (sign) paint. Letter sizes, colors and related information are given on the illustration below. A self-adhesive decal of the State seal will be furnished at the Contract signing. Erect the sign within two (2) weeks after execution of the Contract and remove the sign within one (1) week after completion of the project.
   c. **Project Sign Detail:** Sign letter sizes, fonts, colors and related information are shown in the illustration available for download from the DAS website (www.ct.gov/das) > Doing Business withthe State > State Building Construction > Publications and Forms > DAS Construction Services Library > 3000 Series - Design Phase Forms.

J. **Temporary Exterior Lighting:** Install exterior yard and sign lights so signs are visible when Work is being performed.

K. Collection and Disposal of Waste and Cleaning:

1. Collect waste within the contract limit line from construction areas daily. Provide separate containers for proper waste recycling. Comply with requirements of NFPA 241 for removal of combustible waste material and debris. Enforce requirements strictly. Do not hold materials

more than seven (7) days during normal weather or three (3) days when the temperature is expected to rise above 80 degrees F. Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose of material lawfully.

2. Maintain areas under Contractor's control free of waste materials, debris and rubbish. Maintain in a clean and orderly condition.

3. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces and other closed or remote spaces before closing the space.

4. Periodically clean interior areas before start of surface finishing and continue cleaning on an as-needed basis.

5. Control cleaning operations so that dust and other particulates will not adhere to wet or newly coated surfaces.

L. Temporary Environmental Controls: Contractor is to provide the following controls.

1. Rodent and Pest Control: Before deep foundation work has been completed, retain a local exterminator or pest control company to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests. Employ this service to perform extermination and control procedures at regular intervals so the Project will be free of pests and their residues at materials.

2. Dust Control (construction and demolition).

3. Noise Control.

4. Erosion and Sediment Control.

5. Pollution Control.

6. Traffic Control.

M. Stairs: Until permanent stairs are available, provide temporary stairs where ladders are not adequate. Cover finished permanent stairs with a protective covering of plywood or similar material so finishes will be undamaged at the time of acceptance.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION (LISTED IN PARAGRAPH 1.2 D)

A. Except for use of permanent fire protection as soon as available, do not change over from use of temporary security and protection facilities to permanent facilities until Substantial Completion, or longer, as requested by the Owner.

B. Temporary Fire Protection: Until fire-protection needs are supplied by permanent facilities, install and maintain temporary fire-protection facilities of the types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 10 "Standard for Portable Fire Extinguishers" and NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations."

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

2. Store combustible materials in containers in fire-safe locations.

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

4. Provide supervision of welding operations, combustion-type temporary heating units, and similar sources of fire ignition.

5. The Contractor, during construction, shall be responsible for loss or damage by fire to the work of the Contract until completion. Any fire used within the structure for working purposes shall be extinguished when not in use. Bitumen or tar shall be melted on the ground only. No flammable material shall be stored in the structure in excess of amounts allowed by the authorities. No gasoline shall be stored in or close to the building at any time. The Contractor shall assign a responsible employee to be in charge of fire protection measures.

C. **Permanent Fire Protection:** At the earliest feasible date in each area of the Project, complete installation of the permanent fire-protection facility, including connected services, and place into operation and use. Instruct key personnel on use of facilities.

D. Security for Site and Agency:

1. Provide security program and facilities to protect work, existing facilities and the Owner and Agency's operations from unauthorized entry, vandalism and theft. Coordinate with the Owner's and Agency's security program.
2. The Contractor shall be solely responsible for damage, loss or liability due to theft or vandalism.

E. **Barricades, Warning Signs, and Lights:** Comply with standards and code requirements for erection of structurally adequate barricades. Paint with appropriate colors, graphics, and warning signs to inform personnel and the public of the hazard being protected against. Where appropriate and needed, provide lighting, including flashing red or amber lights.

1. Provide covered walkways as required by governing authorities for public rights-of-way and for public access to existing buildings.
2. Provide temporary, insulated, weathertight closures at openings to the exterior to provide acceptable working conditions and protection for materials, to allow for temporary heating and to prevent entry of unauthorized persons. Provide doors with self-closing hardware and locks.
3. Barriers and enclosures shall be in conformance with code requirements. Do not block egress from occupied buildings unless necessary to further the work of the Contract. In this case, secure the Owners approval of an alternate egress plan.
4. See also General Conditions Article 19, "Protection of the Work, Persons and Property".

F. **Enclosure Fences:** Before excavation begins, install an enclosure fence with lockable entrance gates. Locate where indicated on the Construction Documents, or enclose the entire site or the portion determined sufficient to accommodate construction operations. Install in a manner that will prevent people, dogs, and other animals from easily entering the site, except by the entrance gates.

1. Provide chain link construction fencing with posts set in a compacted mixture of gravel and earth. Use existing fence to the extent possible.

G. **Security Enclosure and Lockup:** Install substantial temporary enclosure of partially completed areas of construction. Provide locking entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security. Provide keys to the Construction Administrator.

1. **Storage:** Where materials and equipment must be stored, and are of value or attractive for theft, provide a secure lockup. Enforce discipline in connection with the installation and release of material to minimize the opportunity for theft and vandalism.

H. Protection:

I. Protect buildings, equipment, furnishings, grounds and plantings from damage. Any damage shall be repaired or otherwise made good at no expense to the Owner.

J. Provide protective coverings and barricades to prevent damage. The Contractor shall be held responsible for, and must make good at his own expense, any water or other type of damage due to improper coverings. Protect the public and building personnel from injury.

K. Provide temporary protection for installed products. Control traffic in immediate area to minimize damage.

L. Provide protective coverings for walls, projections, jambs, sills and soffits of openings. Protect finished floors and stairs from traffic, movement of heavy objects and storage. Prohibit traffic and storage on waterproofed and roofed surfaces and on lawn and landscaped areas.

M. Provide temporary partitions and ceilings to separate work areas from Agency-occupied areas to prevent penetration of dust and moisture into Agency-occupied areas and equipment. Erect framing and sheet materials with closed joints and sealed edges at intersections with existing surfaces.

N. See also General Conditions Article 19, "Protection of the Work, Persons and Property".

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

P. Traffic Ways:

1. The Contractor may use on-site paved roads and parking areas but shall not encumber same or their access. Public highways shall not be blocked by standing trucks, parked cars, material storage, construction, operations or in any other manner.

2. Public roads and existing paved roads, drives and parking areas on Owner's property shall be kept free from scrap or debris due to construction operations and any damage to their surface caused by the Contractor shall be repaired by him at his own expense.

3. If the work of the Contract affects public use of any street, road, highway or thoroughfare, the Contractor shall confer with the police authority having jurisdiction to determine if and how many police are needed for public safety in addition to any barriers and signals that may be needed. The Contractor will be responsible for payment of any needed police services.

4. Access to construction Project will not be used during time periods when the students are arriving and being dismissed. No access to the Gate will be allowed:

Monday – Friday	6:45	a.m.	–	7:30	a.m.
Monday – Friday	1:45	p.m.	–	2:30	a.m.

5. This time period is subject to change at the discretion of the Construction Administrator to coincide with the Ella T. Grasso Technical High School Schedule.

Q. Identification Badges for Contractor's Personnel, Visitors and Parking Stickers:

1. The Contractor will provide each person working or visiting at the site with an identification badge, bearing the name of the Contractor and a number. As badges are assigned, a record shall be kept by the Contractor and given to the Construction Administrator and Agency Administrator. Update and correct the records of all badges issued on a semi-monthly basis.

2. Badges are to be worn on outer garment where visible at all times while at the construction site, return them to the Contractor’s field office at the end of each day and pick them up there each morning.

3. All vehicles parking in the Contractor's parking lot and those used around the site require an ID sticker. They will be issued by the Agency. Each contractor shall apply for parking stickers through the Construction Administrator no more than semi-monthly and shall keep record of all stickers issued.

3.5 OPERATION, TERMINATION, AND REMOVAL

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

B. **Maintenance:** Maintain facilities in good operating condition until removal. Protect from damage by freezing temperatures and similar elements.

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

2. Protection: Prevent water-filled piping from freezing. Maintain markers for underground lines. Protect from damage during excavation operations.

C. **Termination and Removal:** Unless the Architect/CA requests that it be maintained longer, remove each temporary facility when the need has ended, when 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 the 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 the Contractor's property. The

Owner reserves the right to take possession of project identification signs.

2. Remove temporary paving not intended for or acceptable for integration into permanent paving. Where the area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil in the area. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at the temporary entrances, as required by the governing authority.

3. At Substantial Completion, clean and renovate permanent facilities used during the construction period including, but not limited to, the following:

   a. Replace air filters and clean inside of ductwork and housings.

   b. Replace significantly worn parts and parts subject to unusual operating conditions.

   c. Replace lamps burned out or noticeably dimmed by hours of use.

END OF SECTION 01 50 00

[i] Addendum 2,Item 11
[ii] Addendum 2, Item 12

ADDENDUM 2, Item 3

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements governing the Contractor's selection of products for use in the Project.

B. **Related Sections:** The following Sections contain requirements that relate to this Section:

1. Division 01 Section 01 25 00 "Substitution Procedures" specifies administrative procedures for handling requests for substitutions made after award of the Contract.
2. Division 01 Section 01 33 00 "Submittal Procedures" specifies requirements for submittal of the Contractor's Construction Schedule and the Submittal Schedule.
3. Division 01 Section 01 42 20 "Reference Standards and Definitions" specifies the applicability of industry standards to products specified.

1.3 DEFINITIONS

A. Definitions used in this Article are not intended to change the meaning of other terms used in the Contract Documents, such as "specialties," "systems," "structure," "finishes," "accessories," and similar terms. Such terms are self-explanatory and have well-recognized meanings in the construction industry.

1. "Products" are items purchased for incorporation in the Work, whether purchased for the Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
   a. "Named Products" are items identified by the manufacturer's product name, including make or model number or other designation, shown or listed in the manufacturer's published product literature, which is current as of the date of the Contract Documents.
2. "Materials" are products substantially shaped, cut, worked, mixed, finished, refined or otherwise fabricated, processed, or installed to form a part of the Work.
3. "Equipment" is a product with operational parts, whether motorized or manually operated, that requires service connections, such as wiring or piping.

1.4 QUALITY ASSURANCE

A. **Source Limitations:** To the fullest extent possible, provide products of the same kind from a single source.

B. **Compatibility of Options:** When the Contractor is given the option of selecting between two (2) or more products for use on the Project, the product selected shall be compatible with products previously selected, even if previously selected products were also options.

C. **Nameplates:** Except for required labels and operating data, do not attach or imprint manufacturer's or producer's nameplates or trademarks on exposed surfaces of products that will be exposed to view in occupied spaces or on the exterior.

1. Labels: Locate required product labels and stamps on concealed surfaces or, where required for observation after installation, on accessible surfaces that are not conspicuous.
2. Equipment Nameplates: Provide a permanent nameplate on each item of service-connected or power-operated equipment. Locate on an easily accessible surface that is inconspicuous in occupied spaces. The nameplate shall contain the following information and other essential operating data:
   a. Name of product and manufacturer.
   b. Model and serial number.
   c. Capacity.

ADDENDUM 2, Item 3

d. Speed.

e. Ratings.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products according to the manufacturer's recommendations, using means and methods that will prevent damage, deterioration, and loss, including theft.

1. Schedule delivery to minimize long-term storage at the site and to prevent overcrowding of construction spaces.
2. Coordinate delivery with installation time to assure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
3. Deliver products to the site in an undamaged condition in the manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing. Store products in accordance with manufacturers' instructions and maintain within temperature and humidity range required by manufacturer.
4. Inspect products upon delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.
5. Store products at the site in a manner that will facilitate inspection and measurement of quantity or counting of units.
6. Store heavy materials away from the Project structure in a manner that will not endanger the supporting construction.
7. Store products subject to damage by the elements above ground, under cover in a weathertight enclosure, with ventilation adequate to prevent condensation.
8. For exterior storage of fabricated products, place on sloped supports above ground. Cover products subject to deterioration with impervious sheet covering; provide ventilation to avoid condensation.
9. Store loose granular material on solid surfaces in a well-drained area; prevent mixing with foreign matter.
10. Arrange storage to provide access for inspection. Periodically inspect to insure products are undamaged and are maintained under required conditions. Keep log showing date, time and problems, if any.
11. Stone, masonry units and similar materials shall be stored on platforms or dry skids and shall be adequately covered and protected against damage.
12. Materials and equipment shall be delivered, stored and handled to prevent intrusion of foreign matter and damage by weather or breakage. Packaged materials shall be delivered and stored in original, unbroken packages.
13. Promptly inspect shipments to assure that products comply with requirements, that quantities are correct and products are undamaged.
14. Packages, materials and equipment showing evidence of damage will be rejected and replaced at no additional cost to the Owner.

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION

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

1. Provide products complete with accessories, trim, finish, safety guards, and other devices and details needed for a complete installation and the intended use and effect.
2. Standard Products: Where available, provide standard products of types that have been produced and used successfully in similar situations on other projects.

B. Product Selection Procedures: The Contract Documents and governing regulations govern product selection. Procedures governing product selection include the following:

1. Semi-proprietary Specification Requirements: Where Specifications name two (2) or more products or manufacturers, provide one (1) of the products indicated. Comply with the requirements of Division 01 Section 01 25 00 "Substitution Procedures."
2. Descriptive Specification Requirements: Where Specifications describe a product or assembly, listing exact characteristics required, with or without use of a brand or trade name, provide a product or assembly that provides the characteristics and otherwise complies with Contract requirements.
3. Compliance with Standards, Codes, and Regulations: Where Specifications only require compliance with an imposed code, standard, or regulation, select a product that complies with the standards, codes, or regulations specified.
4. Visual Selection: Where specified product requirements include the phrase *"...as selected from manufacturer's standard colors, patterns, textures..."* or a similar phrase, select a product and manufacturer that complies with other specified requirements. The Architect will select the color, pattern, and texture from the product line selected.

PART 3 - EXECUTION

3.1 INSTALLATION OF PRODUCTS

A. Comply with manufacturer's instructions and recommendations for installation of products in the applications indicated. Anchor each product securely in place, accurately located and aligned with other Work.

1. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

END OF SECTION 01 60 00

ADDENDUM 2, Item 3

(B L A N K P A G E)

ADDENDUM 2, Item 3

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. General: This Section specifies administrative and procedural requirements for field engineering services including, but not limited to, the following:

1. Land survey work.
2. Civil Engineering services.

B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 01 Section 01 31 00 "Project Management and Coordination" for procedures for coordinating field engineering with other construction activities.
2. Division 01 Section 01 33 00 "Submittal Procedures" for submitting Project record surveys.
3. Division 01 Section 01 77 00 "Closeout Procedures" for submitting final property survey with Project Record Documents and recording of Owner-accepted deviations from indicated lines and levels.

1.3 SUBMITTALS

A. Certificates: Submit a certificate from the Land Surveyor stating that the control information furnished by the Owner is accurate or identify inaccuracies, if they exist. The Contractor shall not take advantage of errors, which may be included in the control information. Stakes and markings shall be preserved.

B. Final Property Survey: Prepare and submit 3 paper copies of the final property survey and the drawing file in DWG format.

C. Project Record Documents: Submit a record of Work performed and record survey data as required under provisions of "Submittals" and "Project Closeout" Sections.

1.4 QUALITY ASSURANCE

A. Provide field engineering services to establish and record grades, lines and elevations.

B. The Contractor shall retain a Land Surveyor registered by the State of Connecticut to confirm State furnished base lines and benchmarks, lay out the building, underground utility lines and other site work from the information furnished by the Owner and to establish and record the necessary elevations, at no additional cost to the State.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Identification: The Owner will identify two (2) base lines on the Contract Drawings.

B. Verify layout information shown on the Drawings, in relation to the property survey and existing benchmarks. Notify the Construction Administrator of any discrepancies immediately in writing before proceeding to lay out the Work. Locate and protect existing benchmarks and base line. Preserve permanent reference points during construction.

1. Do not change or relocate benchmarks or base line without prior written approval. Promptly report lost or destroyed reference points or requirements to relocate reference points because of necessary changes in grades or locations.
2. Promptly replace lost or destroyed Project baseline benchmarks. Base replacements on the original survey control points.

C. Establish and maintain a sufficient quantity of (minimum of 2) permanent benchmarks on the site, referenced to data established by Owner supplied information.

1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.

D. **Existing Utilities and Equipment:** The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities and other construction.

1. Prior to construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping. Notify the Construction Administrator of any discrepancies prior to proceeding.

3.2 PERFORMANCE

A. Work from lines and levels established by the property survey. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of the Project. Calculate and measure required dimensions within indicated or recognized tolerances. Do not scale Drawings to determine dimensions.

1. Advise entities engaged in construction activities of benchmarks and control points for their use.
2. As construction proceeds, check every major element for line, level, and plumb.

B. **Surveyor's Log:** Maintain a surveyor's log of control and other survey work. Make this log available for reference.

1. Record deviations from required lines and levels, and advise the Construction Administrator when deviations that exceed indicated or recognized tolerances are detected. On Project Record Drawings, record deviations that are accepted and not corrected.
2. On completion of foundation walls, major site improvements, underground utilities, and other Work requiring field-engineering services, prepare a certified survey showing dimensions, locations, angles, elevations of construction, as-built locations and site work.

C. **Site Improvements:** Locate and lay out site improvements, including pavements, stakes for grading, fill and topsoil placement, utility slopes, and invert elevations.

D. **Building Lines and Levels:** Locate and lay out batter boards for structures, building foundations, column grids and locations, floor levels, and control lines and levels required for mechanical and electrical work.

E. **Existing Utilities:** Furnish information necessary to adjust, move, or relocate existing structures, utility poles, lines, services, or other appurtenances located in or affected by construction. Coordinate with local authorities having jurisdiction.

F. **Final Property Survey:** Prepare a final property survey showing significant features (real property) for the Project. Include on the survey a certification, signed by the surveyor, that principal metes, bounds, lines, and levels of the Project are accurately positioned as shown on the survey.

END OF SECTION 01 71 23

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The Construction Documents, consisting of Drawings, Specifications, and general provisions of the Contract, including Division 00 General and Supplementary Conditions and other Division 01 Specification Sections, are complimentary; they include and apply to this Section

1.2 SUMMARY

A. This Section Includes administrative and procedural requirements for cutting and patching.

B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 01 Section 01 31 00 "Project Management and Coordination" for procedures for coordinating cutting and patching with other construction activities.
2. Division 01 Section 01 35 16 “Alteration Project Procedures”
3. Divisions 2 through 49 Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.

1.3 SUBMITTALS

A. Cutting and Patching Proposal: Submit a proposal to the DCS Project Manager and/or Construction Administrator, describing procedures well in advance of the time cutting and patching will be performed to determine if the Owner and/or Architect/Engineer requires approval of these procedures before proceeding. Request approval to proceed. Include the following information, as

B. applicable, in the proposal:

1. Describe the extent of cutting and patching required. Show how it will be performed and indicate why it cannot be avoided.
2. Describe anticipated results in terms of changes to existing construction. Include changes to structural elements and operating components as well as changes in the building's appearance and other significant visual elements.
3. Describe effects to integrity of weather exposed or moisture resistant element.
4. Describe effects to efficiency, maintenance, or safety of any operational element.
5. Describe effects to Work of Owner or separate Contractor.
6. List products to be used and firms or entities that will perform Work.
7. Indicate dates when cutting and patching will be performed.
8. List utilities that cutting and patching procedures will disturb or affect. List utilities that will be relocated and those that will be temporarily out of service. Indicate how long service will be disrupted.
9. Where cutting and patching involves adding reinforcement to structural elements, submit details and engineering calculations sealed by an Engineer registered in the State of Connecticut showing integration of reinforcement with the original structure.

C. Approval by the Construction Administrator to proceed with cutting and patching does not waive the Architect/Engineer of Record’s rights to later require complete removal and replacement of unsatisfactory Work.

1.4 QUALITY ASSURANCE

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

1. Obtain approval from the Architect/Engineer of the cutting and patching proposal before cutting and patching the following structural elements:
   - **a.** Foundation construction.
   - **b.** Bearing and retaining walls.

c. Structural concrete.

d. Structural steel.

e. Lintels.

f. Structural decking.

g. Miscellaneous structural metals.

h. Equipment supports.

i. Piping, ductwork, vessels, and equipment.

j. Structural systems of special construction.

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

1. Obtain Architect/Engineer's approval of the cutting and patching proposal before cutting and patching the following operating elements or safety related systems:

a. Primary operational systems and equipment.

b. Air or smoke barriers.

c. Water, moisture, or vapor barriers.

d. Membranes and flashings.

e. Fire protection systems.

f. Noise and vibration control elements and systems.

g. Control systems.

h. Communication systems.

i. Electrical wiring systems.

j. Operating systems of special construction.

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

1.5 WARRANTY

A. Warranties: Replace, patch, and repair material and surfaces cut or damaged by methods and with materials in such a manner as not to void any warranties required or existing.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Use materials identical to existing materials. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible if identical materials are unavailable or cannot be used. Use materials whose installed performance will equal or surpass that of existing materials.

B. The Contractor or its trade subcontractors shall install sleeves, inserts and hangers furnished by the trades needing same.

PART 3 - EXECUTION

3.1 INSPECTION

A. Examine surfaces to be cut and patched and conditions under which cutting and patching is to be performed before cutting. If unsafe or unsatisfactory conditions are encountered, notify the Construction Administrator and Architect, before proceeding with corrective action.

B. Openings and chases may not be shown on the Drawings. It is the responsibility of the Contractor to examine the Architectural, Electrical, Heating, Cooling, Ventilating and Plumbing Drawings and to provide chases, channels or openings where needed.

1. After installing Work into openings, channels and/or chases, the Contractor shall close same. If finishes are to be restored, the new Work shall match the original and shall be done by the trade customarily responsible for the original installation.

C. The Contractor shall verify dimensions for built-in Work and/or Work adjoining that of other trades before ordering any material or doing any Work. Discrepancies shall be submitted to the Construction Administrator before proceeding with the Work.

D. See also Division 00 General Conditions of the Contract for Construction – Article 23 “Cutting, Fitting, Patching & Digging”.

3.2 PREPARATION

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

B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of the Work that might be exposed during cutting and patching operations.

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

D. Avoid cutting existing pipe, conduit, or ductwork serving the building but scheduled to be removed or relocated until provisions have been made to bypass them.

3.3 PERFORMANCE

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

1. Cut existing construction to provide for installation of other components or performance of other construction activities and the subsequent fitting and patching required to restore surfaces to their original condition.

2. Perform cutting and patching to integrate elements of Work. Provide penetrations of existing surfaces. Provide samples for testing. Seal penetrations through floors, walls, ceilings and roofs, as applicable; restore or preserve fire-rated and smoke-barrier construction. Construction and finishes shall match original Work.

B. Cutting: Cut existing construction using methods least likely to damage elements retained or adjoining construction. Where possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.

1. In general, use tools designed for the required procedure. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.

2. Cutting Torches and Welding: Open flame work in general is to be avoided. Where no other practicable option exists, exercise all “hot-work” procedures and make all required notifications. Proceed only when approvals and protectives are in place.

3. To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.

4. Cut through concrete and masonry using a cutting machine, such as a Carborundum saw or a diamond-core drill.

5. Comply with requirements of applicable Division 32 Sections where cutting and patching requires excavating and backfilling.

6. Where services are required to be removed, relocated, or abandoned, by-pass utility services, such as pipe or conduit, before cutting. Cut-off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal the remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after by-passing and cutting.

7. To avoid multiple cutting and patching operations in the same area, proceed with patching only after construction operations requiring cutting are complete. Coordinate operations of Trade Contractors to minimize cutting and patching.

3.4 PATCHING AND REPAIRS

A. General: Promptly repair damage to adjacent construction caused by cutting and patching operations.

B. Repairs: Make repairs to existing surfaces match new materials. Replace portions of existing surfaces that are damaged, lifted, discolored, or showing imperfections. Repair substrate prior to replacing finish.

1. Completely fill holes and depressions in existing masonry walls that are to remain with an approved masonry patching material applied according to manufacturer's written recommendations.

2. Completely fill holes and depressions in existing concrete floors that are to remain with a feather-able material approved by the flooring manufacturer and applied according to manufacturer's written recommendations.

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

1. Transitions: Where new Work abuts or aligns with existing, perform a smooth and even transition. Patch work to match existing adjacent Work in texture and appearance. When finished surfaces are cut so that a smooth transition with new Work is not possible, terminate existing surface along a straight line at a natural line of division and make recommendation to Architect.

2. Adjustments: Where a change of plane of ¼ inch in 12 inches or more occurs, request recommendation from Architect for providing a smooth transition.

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

4. Masonry: Tooth-in new masonry into existing masonry where infilling openings or patching holes and use mortar and masonry units matching existing to make new infill as inconspicuous as possible.

5. Finishes:

   a. Finish surfaces as specified in individual Product sections.

   b. Finish patches to produce uniform finish and texture over entire area. When finish cannot be matched, refinish entire surface to nearest intersections.

   c. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that eliminates evidence of patching and refinishing.

      1) Where patching occurs in a painted surface, apply primer and intermediate paint coats over patch and apply final paint coat over entire unbroken surface containing patch. Provide additional coats until patch blends with adjacent surfaces.

      2) Repaint entire surrounding surface, base to ceiling, corner-to-corner.

6. Ceilings: Repair or rehang existing ceilings as necessary to provide an even-plane surface of uniform appearance.

   a. Replace tiles affected by the Work , showing damaged edges, gouged surfaces, or finger marks,

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

D. Inspection: Where feasible, test and inspect patched and repaired areas after completion to demonstrate integrity of installation.

3.5 CLEANUP

A. Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar items. Thoroughly clean piping, conduit, and similar features before applying paint or other finishing materials. Restore damaged pipe covering to its original condition.

3.6 WASTE DISPOSAL

A. General: Promptly dispose of removed materials. Do not allow removed materials to accumulate on-site. Recycle materials as specified in other Division 1 sections.

B. Removal: Remove and transport debris in a controlled manner that will prevent spillage on adjacent surfaces and areas.

C. Burning: Do not burn removed materials.

D. Disposal: Transport removed materials off Owner's property and dispose of legally.

E. Responsibility for Costs: Contractor is responsible for all costs incurred for waste removal including but not limited to, labor, dumpster rental, hauling fees, tipping fees, recycling fees, trucking fees, bulky waste transfer station fees, and any applicable taxes.

END OF SECTION 01 73 29

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ADDENDUM 2, Item 3

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

1. The Construction Documents, consisting of Drawings, Specifications, and general provisions of the Contract, including Division 00 General and Supplementary Conditions and other Division 01 Specification Sections, are complimentary; they include and apply to this Section

1.2 SUMMARY

A. This Section includes requirements for waste management goals, waste management plan and waste management plan implementation.

B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 01 Section 01 11 00 "Summary of Work".
2. Division 01 Section 01 29 76 “Progress Payment Procedures”.
3. Division 01 Section 01 25 00 "Substitution Procedure".
4. Division 01 Section 01 31 19 "Project Meetings".
5. Division 01 Section 01 33 00 "Submittal Procedures".
6. Division 01 Section 01 45 00 "Quality Control".
7. Division 01 Section 01 50 00 "Temporary Facilities and Controls".
8. Division 01 Section 01 60 00 "Product Requirements".
9. Division 01 Section 01 77 00 "Closeout Procedures".

1.3 DEFINITIONS

A. Construction Waste: Solid wastes such as building materials, packaging and rubble resulting from construction, paving and infrastructure.

B. Demolition Waste: Solid wastes such as concrete, wood, brick, plaster, roofing materials, wallboard, metals, carpeting, insulation, and clean fill resulting from demolition or selective demolition of structures.

C. Recyclable Materials: Products and materials that can be recovered and remanufactured into a new product. Recyclable materials include, but are not limited to, the following:

1. Metals (ferrous and non-ferrous), including banding, metal studs, ductwork, and piping.
2. Asphaltic concrete paving.
3. Portland cement concrete.
4. Gypsum products.
5. Paper and cardboard.
6. Wood products, including structural, finish, crates, and pallets.
7. Brick and masonry.
8. Carpet and padding.
9. Plastics.
10. Copper wiring.

D. Recycling Facility: A business that specializes in collecting, handling, processing, distributing, or remanufacturing waste materials generated by new construction projects, into products or materials that can be used for this project or by others.

E. Salvage and Reuse: Existing usable product or material that can be saved and reused in some manner on the project site. Materials for reuse must be approved by the Architect. Materials that can be salvaged and reused must comply with applicable technical specifications and include, but are not limited to, the following:

1. Dimensional lumber and other wood products.
2. Structural steel.
3. Soil.
4. Masonry products.
5. Plants.

F. Salvage for Resale: Existing usable product that can be saved and removed intact (as is) from the project site to another site for resale to others without remanufacturing.

1.4 WASTE MANAGEMENT GOALS

A. The Owner has established that this Project shall generate the least amount of waste possible and that processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors shall be employed.

B. The Contractor shall use all means available to divert the greatest extent practical and economically feasible, construction waste from landfills and incinerators.

C. Of the inevitable waste that is generated, as many of the waste materials as economically feasible shall be reused, salvaged, or recycled. Waste disposal in landfills shall be minimized.

D. Recycle and/or salvage a minimum of 50 percent of non-hazardous construction and demolition waste by weight of the total solid waste generated by the Project.

E. With regard to these goals the Contractor shall develop, for the Architect's review, a Waste Management Plan for this Project.

F. Take a pro-active, responsible role in management of construction waste and require all subcontractors, vendors, and suppliers to participate in the effort. Establish a construction waste management program that includes the following categories:

1. Minimizing packaging waste.
2. Salvage and reuse.
3. Salvage for resale or donation.
4. Recycling.
5. Disposal.

1.5 SUBMITTALS

A. Draft Waste Management Plan: Within thirty (30) days after receipt of Notice of Award of Bid, or prior to any waste removal, whichever occurs sooner, the Contractor shall submit three (3) copies of a Draft Waste Management Plan to the Construction Administrator.

B. Final Waste Management Plan: Once the Owner has determined which of the recycling options addressed in the Draft Waste Management Plan are acceptable, the Contractor shall submit within ten (10) days three (3) copies of a Final Waste Management Plan.

C. Progress Reports: Submit three (3) copies of monthly progress reports, at the same time as the Application for Payment, documenting the following:

1. Material category.
2. Point of waste generation.
3. Total quantity of waste in tons.
4. Quantity of waste salvaged, in tons.
5. Quantity of waste recycled, in tons.
6. Total quantity of waste recovered (salvaged plus recycled) in tons.
7. Total quantity of waste recovered (salvaged plus recycled) as a percentage of total waste.

D. Calculations: Submit three (3) copies of calculations indicating the end-of-project rates for salvage, recycling, and disposal as a percentage of total waste generated by the Project prior to Substantial Completion.

E. Record Submittals:

1. Donations: Indicate which salvageable materials were donated, who they were donated to, and whether the recipient is tax exempt. Submit documentation indicating receipt of donations.

2. Sales: Indicate which salvageable materials were sold, who they were sold to, and whether the recipient is tax exempt. Submit documentation indicating receipt of materials.

3. Recycling: Indicate which materials were recycled and the name of the facility licensed to accept them. Submit documentation such as manifests, weight tickets, receipts, and invoices.

4. Waste Disposal: Indicate which materials were accepted as waste by landfills and incinerator facilities licensed to accept them. Submit documentation indicating receipt of materials.

1.6 QUALITY ASSURANCE

A. Regulatory Requirements: Comply with regulations of State of Connecticut Department of Environment Protection, Waste Management Bureau Recycling Program.

B. Waste Management Conference: Review and discuss the waste management plan, requirements for documenting quantities of each type of waste and its disposition, procedures for materials separation, procedures for periodic collection and transportation to recycling and disposal facilities. Review waste management requirements for each trade. Verify availability of containers and bins needed to avoid delays.

1.7 WASTE MANAGEMENT PLAN

A. Draft Waste Management Plan: Include the following in the Draft Plan:

1. Analysis of the proposed jobsite waste to be generated, including types and quantities.

2. Landfill Options: The name of the landfill(s) where trash will be disposed of, the applicable landfill tipping fee(s), and the projected cost of disposing of all Project waste in the landfill(s).

3. Alternatives to Landfilling: A list of each material proposed to be salvaged, reused, or recycled during the course of the Project, the proposed local market for each material, and the estimated net cost savings or additional costs resulting from separating and recycling (versus landfilling) each material. "Net" means that the following have been subtracted from the cost of separating and recycling:

a. Revenue from the sale of recycled or salvaged materials and

b. Landfill tipping fees saved due to diversion of materials from the landfill. The list of these materials is to include, at a minimum, the following materials:

1) Cardboard.

2) Clean dimensional wood.

3) Beverage containers.

4) Land clearing debris.

5) Concrete.

6) Bricks.

7) Concrete Masonry Units (CMU).

8) Asphalt.

9) Metals from banding, stud trim, ductwork, piping, rebar, roofing, other trim, steel, iron, galvanized sheet steel, stainless steel, aluminum, copper, zinc, lead, brass, and bronze.

B. Resources for Development of Waste Management Plan: The following sources may be useful in developing the Draft Waste Management Plan:

1. Recycling Haulers and Markets: Local haulers and markets for recyclable materials. For more information, contact the State of Connecticut Department of Environmental Protection, Waste

Management Bureau Recycling Program, (860) 424-3365, www.dep.state.ct.us/wst/recycle/ctrecycle.htm.

C. Final Waste Management Plan: The Final Waste Management Plan shall contain the following:

1. Analysis of the proposed jobsite waste to be generated, including types and quantities.

2. Landfill Options: The name of the landfill(s) where trash will be disposed of, the applicable landfill tipping fee(s), and the projected cost of disposing of all Project waste in the landfill(s).

3. Alternatives to Landfilling: A list of the waste materials from the Project that will be separated for reuse, salvage, or recycling.

4. Meetings: A description of the regular meetings to be held to address waste management. Refer to Section 01 31 19 "Project Meetings".

5. Materials Handling Procedures: A description of the means by which any waste materials identified in item (3) above will be protected from contamination, and a description of the means to be employed in recycling the above materials consistent with requirements for acceptance by designated facilities.

6. Transportation: A description of the means of transportation of the recyclable materials (whether materials will be site-separated and self-hauled to designated centers, or whether mixed materials will be collected by a waste hauler and removed from the site) and destination of materials.

1.8 WASTE MANAGEMENT PLAN IMPLEMENTATION

A. Manager: The Contractor shall designate an on-site party (or parties) responsible for instructing workers and overseeing and documenting results of the Waste Management Plan for the Project.

B. Distribution: The Contractor shall distribute copies of the Waste Management Plan to the Job Site Foreman, each Subcontractor, the Owner, and the Architect.

C. Instruction: The Contractor shall provide on-site instruction of appropriate separation, handling, and recycling, salvage, reuse, and return methods to be used by all parties at the appropriate stages of the Project.

D. Separation Facilities: The Contractor shall lay out and label a specific area to facilitate separation of materials for potential recycling, salvage, reuse, and return. Recycling and waste bin areas are to be kept neat and clean and clearly marked in order to avoid contamination of materials.

E. Hazardous Wastes: Hazardous wastes shall be separated, stored, and disposed of according to local regulations.

F. Application for Progress Payments: The Contractor shall submit with each Application for Progress Payment a Summary of Waste Generated by the Project. Failure to submit this information shall render the Application for Payment incomplete and shall delay Progress Payment. The Summary shall be submitted on a form acceptable to the Owner and shall contain the following information:

1. The amount (in tons or cubic yards) of material landfilled from the Project, the identity of the landfill, the total amount of tipping fees paid at the landfill, and the total disposal cost. Include manifests, weight tickets, receipt, and invoices.

2. For each material recycled, reused, or salvaged from the Project: the amount (in tons or cubic yards), the date removed from the jobsite, the receiving party, the transportation cost, the amount of any money paid or received for the recycled or salvaged material, and the net total cost or savings of salvage or recycling of each material shall be indicated. Attach manifests, weight tickets, receipts, and invoices.

PART 2 - PRODUCTS

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

A. Implement the waste management plan as approved by DCS Construction Administrator and/or Construction Administrator.

B. Provide training of workers, Contractor's staff, subcontractors, and suppliers on proper waste management procedures.

1. Distribute waste management plan to all parties involved in the Project within three (3) days of submittal return.

2. Distribute plan to parties when they first begin working on the Project site. Review plan procedures and locations established for salvage, recycling, and disposal.

3.2 SEPARATION OF RECYCLABLE WASTE MATERIALS

A. Provide the necessary containers and bins, to facilitate the waste management program, that are clearly and appropriately marked. Prevent contamination of recyclable materials from incompatible products and materials. Separate construction waste at the project site by the following method:

1. Source Separated Method: Waste products and materials, that are recyclable, are separated from trash and sorted into appropriately marked separate containers and then transported to the respective recycling facility for further processing. Trash is transported to a landfill or incinerator.

2. Co-Mingled Method: All construction waste is placed into a single container and then transported to a recycling facility where the recyclable materials are sorted and processed and the remaining trash is transported to a landfill or incinerator.

END OF SECTION 01 74 19

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ADDENDUM 2, Item 3

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

1. The Construction Documents, consisting of Drawings, Specifications, and general provisions of the Contract, including Division 00 General and Supplementary Conditions and other Division 01 Specification Sections, are complimentary; they include and apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for handling requests for building system start up and system demonstration and includes the following:

1. Starting Systems.

2. Demonstration and instructions.

3. Testing, adjusting, and balancing.

B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 01 Section 01 45 00 "Quality Control" specifies quality assurance and inspecting services.

2. Division 01 Section 01 77 00 "Closeout Procedures" specifies requirements for contract close out requirements for system operation and maintenance data and extra materials.

1.3 STARTING SYSTEMS

A. Coordinate schedule for start-up of various equipment and systems.

B. Provide written notification to the Construction Administrator thirty (30) days prior to start-up of each item.

C. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, and control sequence for other conditions that may cause damage.

D. Verify that tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.

E. Verify that wiring and support components are complete and tested.

F. Execute the start-up under supervision of manufacturer's representative, in accordance with manufacturer's instructions.

G. When referenced in individual specification sections, require manufacturer to provide an authorized representative to be present at the site to inspect, check, and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation.

H. Submit a written report in accordance with Division 01 Section 01 45 00 "Quality Control" that the equipment or system has been properly installed and is functioning properly.

1.4 DEMONSTRATION AND INSTRUCTIONS

A. Demonstrate operation and maintenance of Products to Owner and Agency Personnel fourteen (14) days prior to substantial completion.

B. Demonstrate Project equipment and instruct in a classroom environment at location designated by the Construction Administrator and CT DCS PM and instructed by a qualified manufacturer's representative who is knowledgeable about the Project.

C. For equipment or systems requiring seasonal operation perform demonstration for season within six (6) months.

D. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with Owner and Agency Personnel in detail to explain all aspects of operation and maintenance.

E. Demonstrate start-up, operation, control, adjustment, troubleshooting, servicing, and maintenance, and shutdown of each item at agreed upon scheduled time and at equipment or designated location.

F. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during demonstration.

G. Starting and adjusting equipment does not constitute acceptance by the owner since commissioning is a requirement of this contract. Additionally, the warrantee does not begin until substantial completion has been granted for that specific item.

1.5 TESTING, ADJUSTING, AND BALANCING

A. Perform testing, adjusting, and balancing in compliance with Division 23 HVAC balancing requirements.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION (NOT APPLICABLE)

END OF SECTION 01 75 00

ADDENDUM 2, Item 3

PART 1 - GENERAL

1.3 RELATED DOCUMENTS

1. The Construction Documents, consisting of Drawings, Specifications, and general provisions of the Contract, including Division 00 General and Supplementary Conditions and other Division 01 Specification Sections, are complimentary; they include and apply to this Section.

1.4 SUMMARY

A. This Section includes administrative and procedural requirements for contract closeout including, but not limited to, the following:

1. Inspection procedures.

2. Project As-Built document submittal.

3. Operation and maintenance manual submittal.

4. Submittal of warranties.

5. Final cleaning.

B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 01 Section 01 11 00 "Summary of Work".

2. Division 01 Section 01 50 00 “Temporary Facilities and Controls” for project housekeeping during construction.

3. Division 01 Section 01 29 76 "Progress Payment Procedures".

C. Closeout requirements for specific construction activities may be included in the appropriate Sections in Divisions 02 through 49.

1.5 SUBSTANTIAL COMPLETION

A. General: Basic contract definitions are included in Article 1 of the Division 00 General Conditions of the Contract for Construction.

B. Preliminary Procedures: Before requesting inspection for Certification of Substantial Completion, complete the following. List exceptions in the request.

1. In the Application for Payment that coincides with, or first follows, the date Substantial Completion is claimed, show 100 percent completion for the portion of the Work claimed as substantially complete.

a. Include supporting documentation for completion as indicated in these Contract Documents and a statement showing an accounting of changes to the Contract Sum.

b. If 100 percent completion cannot be shown, include a list of incomplete items, the value of incomplete construction, and reasons the Work is not complete.

2. Advise the Owner of pending insurance changeover requirements.

3. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications, and similar documents.

4. Obtain and submit releases enabling the Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, certificates of compliance, operating certificates, and similar releases.

5. Submit as-built drawings, maintenance manuals, damage or settlement surveys, property surveys, and similar final As-Built information.

6. Deliver tools, spare parts, extra stock, and similar items.

7. Make final changeover of permanent locks and transmit keys to the Owner. Advise the Owner's personnel of changeover in security provisions.

8. Demonstrate, thru operation and testing, the functions of all systems and/or equipment to the satisfaction of the Owner for compliance to the Contract. Complete testing of systems and

instruction of the Owner's operation and maintenance personnel. Discontinue and remove temporary facilities from the site, along with mockups, construction tools, and similar elements.

9. Complete final cleanup requirements.

10. Certify that required training of personnel is complete.

11. Contractor shall include in his bid all costs associated with changing all of the room names and numbers at the end of the job from the names and numbers shown on the construction documents to a new set of room names and numbers, inclusive of all re-programming of all MEP and fire protection systems, etc. Final room numbers will be provided by the Architect to the trade contractors at or around the date of Substantial Completion.

C. Inspection Procedures: The Contractor shall be ready and prepared when they request a Substantial Completion inspection. If the inspection reveals that the work is not complete, that there are extensive punchlist items that will take more than ninety (90) days to complete and as the items listed in Article 1.3 above are not complete, the Construction Administrator, Architect, and Owner will determine the inspection has failed.

D. The Contractor is responsible for all costs to re-inspect due to a failed inspection. The Owner will issue a deduct change order to cover all costs for re-inspection.

1. The Architect will repeat inspection when requested and assured that the Work is substantially complete.

2. Results of the completed inspection will form the basis of requirements for final acceptance.

1.6 ACCEPTANCE

A. Preliminary Procedures: Before requesting final inspection for "Certificate of Acceptance" and final payment, complete the following. List exceptions in the request.

1. Submit the final payment request with releases and supporting documentation not previously submitted and accepted. Include insurance certificates for products and completed operations where required.

2. Submit an updated final statement, accounting for final additional changes to the Contract Sum.

3. Submit a certified copy of the Architect's final inspection list of items to be completed or corrected, endorsed and dated by the Architect. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance and shall be endorsed and dated by the Architect.

4. Submit final meter readings for utilities, a measured record of stored fuel, and similar data as of the date of Substantial Completion or when the Owner took possession of and assumed responsibility for corresponding elements of the Work.

5. Submit consent of surety to Final Payment.

6. Submit evidence of final, continuing insurance coverage complying with insurance requirements.

7. Touch up and otherwise repair and restore marred, exposed finishes, including touchup painting.

B. Re-inspection Procedure: The Inspection Group will re-inspect the Work upon receipt of notice from the Construction Administrator that the Work, including inspection list items from earlier inspections, has been completed, except for items whose completion is delayed under circumstances acceptable to the Owner.

1. Upon completion of re-inspection, the Construction Administrator and CT DCS PM will prepare a Certificate of Acceptance. If the Work is incomplete, Construction Administrator will advise the Contractor of Work that is incomplete or of obligations that have not been fulfilled but are required for final acceptance.

1.7 AS-BUILT DOCUMENT SUBMITTALS

A. General: The Contractor shall not use As-built Drawings for construction purposes. Protect Contractor As-built Drawings from deterioration and loss in a secure, fire-resistant location. Provide access to As-built Drawings for the Architect's reference during normal working hours.

Keep documents current; do not permanently conceal any work until required information has been recorded. IMPORTANT NOTE: Failure to keep As-built Documents current is sufficient cause to withhold progress payments.

1. The Contractor shall also hire the services of a Surveyor registered in the State of Connecticut to conduct a final survey to determine the location of exterior underground utility lines and to record the results and update existing electronic media.

2. The record of exterior underground utilities shall be made at the time of installation on Mylar film drawing and AutoCAD (latest version) compatible disks. The drawing shall bear the seal of the Land Surveyor and a statement of accuracy.

B. As-built Drawings: The Contractor shall maintain one (1) clean, complete undamaged set of blue or black line white-prints of Contract Drawings and Shop Drawings. Mark the set to show the actual installation where the installation varies substantially from the Work as originally shown. Mark which drawing is most capable of showing conditions fully and accurately. Where Shop Drawings are used, record a cross-reference at the corresponding location on the Contract Drawings. Give particular attention to concealed elements that would be difficult to measure and record later. Update As-built Drawings monthly, coincident with the submittal of the Application for Payment.

1. Mark as-built sets with erasable pencil to distinguish between variations in separate categories of the Work.

2. Mark all new information that is not shown on Contract Drawings.

3. Note related change-order numbers where applicable.

4. Organize as-built drawing sheets into manageable sets. Bind sets with durable-paper cover sheets; print suitable titles, dates, and other identification on the cover of each set.

5. Upon completion of the work, the Contractor shall submit As-Built Drawings to the Construction Administrator for the Owner's Records who will pass them on to the Architect or Engineer for transferring the changes to the Record Drawings.

6. Submit electronic format data of all Coordination Drawings as required by the Owner, at no additional cost.

7. Refer to Section 01 45 00 "Quality Control", Article 1.3 for required as-built drawings and specifications for fire alarm systems.

C. As-Built Specifications: The Contractor shall maintain one (1) complete copy of the Project Manual, including Addenda. Include with the Project Manual one (1) copy of other written construction documents, such as Change Orders and modifications issued in printed form during construction.

1. Mark these documents to show substantial variations in actual Work performed in comparison with the text of the Specifications and modifications.

2. Give particular attention to equals and substitutions and selection of options and information on concealed construction that cannot otherwise be readily discerned later by direct observation.

3. Note related As-Built Drawing information and Product Data.

4. Upon completion of the Work, submit As-Built Specifications to the Construction Administrator for the Owner's records.

D. As-Built Product Data: The Contractor shall maintain one (1) copy of each Product Data submittal. Note related Change Orders and markup of As-Built Drawings and Specifications.

1. Mark these documents to show significant variations in actual Work performed in comparison with information submitted. Include variations in products delivered to the site and from the manufacturer's installation instructions and recommendations.

2. Give particular attention to concealed products and portions of the Work that cannot otherwise be readily discerned later by direct observation.

3. Upon completion of markup, submit complete set of As-Built Product Data to the Construction Administrator for the Owner's records.

E. As-Built Sample Submitted: Immediately prior to Substantial Completion, the Contractor shall meet

with the Construction Administrator, Architect and the Owner's personnel at the Project Site to determine which Samples are to be transmitted to the Owner for As-Built purposes. Comply with the Owner's instructions regarding delivery to the Owner's Sample storage area.

F. Miscellaneous As-Built Submittals: Refer to other Specification Sections for requirements of miscellaneous As-Built keeping and submittals in connection with actual performance of the Work. Immediately prior to the date or dates of Substantial Completion, complete miscellaneous records and place in good order. Identify miscellaneous records properly and bind or file, ready for continued use and reference. Submit to the Construction Administrator for the Owner's records.

G. Maintenance Manuals:

1. Hard Copies: Provide one (1) complete hard copy set of O & M Manuals. Organize operation and maintenance data into suitable sets of manageable size. Bind properly indexed data in individual, heavy-duty, 2-inch, 3-ring, vinyl-covered binders, with pocket folders for folded sheet information. Mark appropriate identification on front and spine of each binder according to Division 01 Section 01 78 23 "Operation & Maintenance Data".

2. CD: Provide, in addition, a CD with complete content of the O & M data in PDF format. Organize content of O&M data in PDF in the same order and indexed the same as hard copy. Mark identification on CD with non-removable label.

3. Information to be provided shall include but not be limited to the following:

a. Emergency instructions.

b. Spare parts list.

c. Copies of warranties.

d. Wiring diagrams.

e. Recommended "turn-around" cycles.

f. Inspection procedures.

g. Shop Drawings and Product Data.

h. Fixture lamping schedule.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION

3.1 CLOSEOUT PROCEDURES

A. Operation and Maintenance Instructions: Arrange for each Installer of equipment that requires regular maintenance to meet with the Owner's personnel to provide instruction in proper operation and maintenance. Provide instruction by manufacturer's representatives if installers are not experienced in operation and maintenance procedures. Include a detailed review of the following items:

1. Maintenance manuals.

2. As-Built documents.

3. Spare parts and materials.

4. Tools.

5. Lubricants.

6. Fuels.

7. Identification systems.

8. Control sequences.

9. Hazards.

10. Cleaning.

11. Warranties and bonds.

12. Maintenance agreements and similar continuing commitments.

B. As part of instruction for operating equipment, demonstrate the following procedures:

1. Startup.

2. Shutdown.

3. Emergency operations.

4. Noise and vibration adjustments.

5. Safety procedures.

6. Economy and efficiency adjustments.

7. Effective energy utilization.

3.2 **3.2 FINAL CLEANING**

A. General: The General Conditions require general cleaning during construction. Regular site cleaning is included in Division 01 Section 01 50 00 "Temporary Facilities and Controls."

B. Cleaning: Employ professional cleaners for final cleaning. Clean each surface or unit to the condition expected in a normal, commercial building cleaning and maintenance program. Comply with manufacturer's instructions.

1. Complete the following cleaning operations before requesting inspection for Certification of Substantial Completion and Certification of Occupancy.

2. Interior:

a. Remove labels that are not permanent labels.

b. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other substances that are noticeable vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Remove paint spots; wash and polish glass.

c. Clean exposed interior hard-surfaced finishes to a dust-free condition, free of stains, films, and similar foreign substances. Restore reflective surfaces to their original condition. Leave concrete floors broom clean. Vacuum carpeted surfaces.

d. Wash washable surfaces of mechanical, electrical equipment and fixtures and replace filters, clean strainers on mechanical equipment. Remove excess lubrication and other substances. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps.

e. Clean and polish finish hardware.

f. Clean and polish tile and other glazed surfaces.

g. Clean floors; wax and buff resilient tile. Clean vinyl or rubber base.

h. Vacuum and/or dust walls, ceilings, lighting fixtures, ceiling diffusers and other wall and ceiling items.

i. Remove defacements, streaks, fingerprints and erection marks.

3. Exterior:

a. Clean the site, including landscape development areas, of rubbish, litter, and other foreign substances. Sweep paved areas broom clean; remove stains, spills, and other foreign deposits. Rake grounds that are neither paved nor planted, to a smooth, even-textured surface.

b. Clean exposed exterior hard-surfaced finishes to a dust-free condition, free of stains, films, and similar foreign substances.

c. Clean roofs and roof drainage systems.

d. Remove waste and surplus materials, rubbish and construction equipment and facilities

from the site, and deposit it legally elsewhere.

e. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other substances that are noticeable vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Remove paint spots. Wash and polish glass.

C. Pest Control: Engage an experienced, licensed exterminator to make a final inspection and rid the work of rodents, insects, and other pests. Provide results of final inspection in writing.

D. Removal of Protection: Remove temporary protection and facilities installed for protection of the Work during construction.

E. Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from the site and dispose of lawfully.

1. Where extra materials of value remain after completion of associated Work, they become the Owner's property. Dispose of these materials as directed by the Construction Administrator and CT DCS PM.

2. Leave building clean and ready for occupancy. If the Contractor fails to clean up, the Owner may do so, with the cost charged to the Contractor. The Owner will issue a credit change order to cover the costs.

END OF SECTION 01 77 00

PART 1 - PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The Construction Documents, consisting of Drawings, Specifications, and general provisions of the Contract, including Division 00 General and Supplementary Conditions and other Division 01 Specification Sections, are complimentary; they include and apply to this Section.

1.2 SUMMARY

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

1. Preparing and submitting operation and maintenance manuals for building operating systems and equipment.

2. Preparing and submitting instruction manuals covering the care, preservation, and maintenance of architectural products and finishes.

1.3 RELATED SECTIONS:

A. The following Sections contain requirements that relate to this Section:

1. Division 01 Section 01 33 00 "Submittal Procedures" specifies preparation of Shop Drawings and Product Data.

2. Division 01 Section 01 75 00 "Starting and Adjusting" specifies instruction of the Owner and Agency operating personnel in the operation and maintenance of building systems and equipment and the general requirements for starting-up equipment and systems.

3. Division 01 Section 01 77 00 "Closeout Procedures" specifies general closeout requirements.

4. Division 01 Section 01 78 30 "Warranties and Bonds" specifies requirements for submittal of warranties and bonds.

5. Division 01 Section 01 81 13 "Sustainable Design Requirements" specifies requirements for submittals related to green building certification.

6. Division 01 Section 01 81 00 “Building Commissioning Requirements” specifies requirements for submittals related Commissioning.

7. Appropriate Sections of Divisions 02 through 49 specify special operation and maintenance data requirements for specific pieces of equipment or building operating systems.

1.4 QUALITY ASSURANCE

A. Maintenance Manual Preparation: In preparation of maintenance manuals, use personnel thoroughly trained and experienced in operation and maintenance of equipment or system involved.

B. Where maintenance manuals require written instructions, use personnel skilled in technical writing where necessary for communication of essential data.

C. Where maintenance manuals require drawings or diagrams, use draftsmen capable of preparing drawings clearly in an understandable format.

D. Instructions for the Owner and Agency Personnel: The Contractor must use experienced instructors thoroughly trained and experienced in operation and maintenance of equipment or system involved, to instruct the Owner's operation and maintenance personnel.

1.5 SUBMITTALS

A. Submittal Schedule: Comply with the following schedule for submitting operation and maintenance manuals:

1. Before Substantial Completion, when each installation that requires operation and maintenance manuals is nominally complete, submit four (4) draft copies of each manual to the DCS Construction Administrator and/or Construction Administrator and Architect for review. Include a complete index or table of contents of each manual.

ADDENDUM 2, Item 3

a. The DCS Construction Administrator and/or Construction Administrator. will return one (1) copy of the draft with comments within twenty - one (21) calendar days of receipt.

b. Submit four (4) copies of data in final form at least twenty-one (21) calendar days before final inspection. The Construction Administrator will return one (1) copy within twenty-one (21) calendar after final inspection, with comments.

B. After final inspection, make corrections or modifications to comply with the Commissioning Agent's (CxA), Architect's, and Agency Representative's comments. Submit final copies to the Construction Administrator within twenty-one (21) calendar days of receipt of the Commissioning Agent's (CxA), Architect's, and Agency Representative's comments.

C. Form of Submittal: Prepare operation and maintenance manuals in the form of an instructional manual for use by the Owner's operating personnel. Organize into suitable sets of manageable size. Where possible, assemble instructions for similar equipment into a single binder.

1. Binders: For each manual, provide heavy-duty, commercial-quality, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to receive 8-1/2-by-11- inch paper. Provide a clear plastic sleeve on the spine to hold labels describing contents. Provide pockets in the covers to receive folded sheets.

2. Identify each binder on front and spine, with the printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter covered. Indicate volume number for multiple volume sets of manuals.

a. Where two (2) or more binders are necessary to accommodate data, correlate data in each binder into related groupings according to the Project Manual table of contents. Cross-reference other binders where necessary to provide essential information for proper operation or maintenance of the piece of equipment or system.

D. Dividers: Provide heavy paper dividers with celluloid-covered tabs for each separate section. Mark each tab to indicate contents. Provide a typed description of the product and major parts of equipment included in the section on each divider.

E. Text Material: Where maintenance manuals require written material, use the manufacturer's standard printed material. If manufacturer's standard printed material is not available, provide specially prepared data, neatly typewritten, on 8-1/2-by-11-inch, 20-lb/sq ft white bond paper.

F. Drawings: Where maintenance manuals require drawings or diagrams, provide reinforced, punched binder tabs on drawings and bind in with text.

1. Where oversize drawings are necessary, fold drawings to the same size as text pages and use as a foldout.

2. If drawings are too large to be used practically as a foldout, place the drawing, neatly folded, in front or rear pocket of binder. Insert a typewritten page indicating drawing title, description of contents, and drawing location at the appropriate location in the manual.

G. CD: Provide CD copy of operation and maintenance manuals containing the all the written and graphic information contained in the paper copy set of operation and maintenance manuals, with information organized in the same order and groupings as hard copies of operation and maintenance manuals specified herein.

1.6 MANUAL CONTENT

A. In each manual include information specified in the individual Specification Section and the following information for each major component of building equipment and its controls:

B. General system or equipment description.

C. Design factors and assumptions.

D. Copies of applicable shop drawings and product data.

E. System or equipment identification, including:

1. Name of manufacturer.

2. Model number.

3. Serial number of each component.

F. Operating instructions.

G. Emergency instructions.

H. Wiring diagrams.

I. Inspection and test procedures.

J. Maintenance procedures and schedules.

K. Precautions against improper use and maintenance.

L. Copies of warranties.

M. Repair instructions including spare parts listing.

N. Sources of required maintenance materials and related services.

O. Manual index.

P. Organize each manual into separate sections for each piece of related equipment. As a minimum, each manual shall contain a title page; a table of contents; copies of product data, supplemented by drawings and written text; and copies of each warranty, bond, and service contract issued.

Q. Title Page: Provide a title page in a transparent, plastic envelope as the first sheet of each manual. Provide the following information:

1. Subject matter covered by the manual.

2. Name and address of the Project.

3. Date of submittal.

4. Name, address, and telephone number of the Contractor.

5. Name and address of the Architect and Construction Administrator.

6. Cross-reference to related systems in other operation and maintenance manuals.

R. Table of Contents: After title page, include a typewritten table of contents for each volume, arranged systematically according to the Project Manual format. Include a list of each product included, identified by product name or other appropriate identifying symbol and indexed to the content of the volume.

1. Where a system requires more than one volume to accommodate data, provide a comprehensive table of contents for all volumes in each volume of the set.

S. Provide a general information section immediately following table of contents, listing each product included in the manual, identified by product name. Under each product, list the name, address, and telephone number of the subcontractor or Installer and the maintenance subcontractor. Clearly delineate the extent of responsibility of each of these entities. Include a local source for replacement parts and equipment.

T. Product Data: Where the manuals include manufacturer's standard printed data, include only sheets that are pertinent to the part or product installed. Mark each sheet to identify each part or product included in the installation. Where the Project includes more than one (1) item in a tabular format, identify each item, using appropriate references from the Contract Documents. Identify data that is applicable to the installation and delete references to information that is not applicable.

U. Written Text: Prepare written text to provide necessary information where manufacturer's standard printed data is not available, and the information is necessary for proper operation and maintenance of equipment or systems. Prepare written text where it is necessary to provide additional information or to supplement data included in the manual. Organize text in a consistent format under separate headings for different procedures. Where necessary, provide a logical sequence of instruction for each operation or maintenance procedure.

V. Drawings: Provide specially prepared drawings where necessary to supplement manufacturer's printed data to illustrate the relationship of component parts of equipment or systems or to provide control or flow diagrams. Coordinate these drawings with information contained in project record drawings to assure correct illustration of the completed installation.

1. Do not use original Record Documents as part of operation and maintenance manuals.

W. Warranties and/or Bonds: Provide a copy of each warranty and/or bond in the appropriate manual for the information of the Owner's operating personnel. Provide written data outlining procedures to follow in the event of product failure. List circumstances and conditions that would affect validity of warranty or bond.

1.7 MATERIAL AND FINISHES MAINTENANCE MANUAL

A. Submit four (4) copies of each manual, in final form, on material and finishes to the Construction Administrator for distribution. Provide one (1) section for architectural products, including applied materials and finishes. Provide a second section for products designed for moisture protection and products exposed to the weather.

1. Refer to individual Specification Sections for additional requirements on care and maintenance of materials and finishes.

B. Architectural Products: Provide manufacturer's data and instructions on care and maintenance of architectural products, including applied materials and finishes.

C. Manufacturer's Data: Provide complete information on architectural products, including the following, as applicable:

1. Manufacturer's catalog number.

2. Size.

3. Material composition.

4. Color.

5. Texture.

6. Reordering information for specially manufactured products.

D. Care and Maintenance Instructions: Provide information on care and maintenance, including manufacturer's recommendations for types of cleaning agents to be used and methods of cleaning. Provide information on cleaning agents and methods that could prove detrimental to the product. Include manufacturer's recommended schedule for cleaning and maintenance.

E. Moisture Protection and Products Exposed to the Weather: Provide complete manufacturer's data with instructions on inspection, maintenance, and repair of products exposed to the weather or designed for moisture-protection purposes.

1. Manufacturer's Data: Provide manufacturer's data giving detailed information, including the following, as applicable:

a. Applicable standards.

b. Chemical composition.

c. Installation details.

d. Inspection procedures.

e. Maintenance information.

f. Repair procedures.

1.8 EQUIPMENT AND SYSTEMS MAINTENANCE MANUAL

A. Submit four (4) copies of each manual, in final form, on equipment and systems to the Construction Administrator for distribution. Provide separate manuals for each unit of equipment, each operating system, and each electric and electronic system.

1. Refer to individual Specification Sections for additional requirements on operation and maintenance of the various pieces of equipment and operating systems.

B. Equipment and Systems: Provide the following information for each piece of equipment, each building operating system, and each electric or electronic system.

1. Description: Provide a complete description of each unit and related component parts, including the following:

a. Equipment or system function.

b. Operating characteristics.

c. Limiting conditions.

d. Performance curves.

e. Engineering data and tests.

f. Complete nomenclature and number of replacement parts.

2. Manufacturer's Information: For each manufacturer of a component part or piece of equipment, provide the following:

a. Printed operation and maintenance instructions.

b. Assembly drawings and diagrams required for maintenance.

c. List of items recommended to be stocked as spare parts.

C. Maintenance Procedures: Provide information detailing essential maintenance procedures, including the following:

1. Operating Procedures: Provide information on equipment and system operating procedures, including the following:

a. Startup procedures.

b. Equipment or system break-in.

c. Routine and normal operating instructions.

d. Regulation and control procedures.

e. Instructions on stopping.

f. Shutdown and emergency instructions.

g. Summer and winter operating instructions.

h. Required sequences for electric or electronic systems.

i. Special operating instructions.

2. Servicing Schedule: Provide a schedule of routine servicing and lubrication requirements, including a list of required lubricants for equipment with moving parts.

D. Controls: Provide a description of the sequence of operation and as-installed control diagrams by the control manufacturer for systems requiring controls.

1. Identification Drawings: Provide each Subcontractor's Identification Drawings.

a. Provide as-installed, color-coded, piping diagrams, where required for identification.

2. Valve Tags: Provide charts of valve-tag numbers, with the location and function of each valve.

3. Circuit Directories: For electric and electronic systems, provide complete circuit directories of panel boards, including the following:

a. Controls.

b. Communication.

1.9 ELECTRONIC MEDIA:

A. For equipment which requires maintenance by operational personnel, provide a professionally developed DVD for the use of maintenance training for the facility. Each DVD will be accompanied by a written index which can be utilized to find any specific item of information by time or place on the DVD.

B. The Contractor is responsible for this production. This DVD will be provided to the Construction Administrator at the same time as the delivery of the other maintenance material.

C. The DVD must be able to be edited for future changes to the equipment and modifications as they occur.

ADDENDUM 2, Item 3

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION (NOT APPLICABLE)

END OF SECTION 01 78 23

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The Construction Documents, consisting of Drawings, Specifications, and general provisions of the Contract, including Division 00 General and Supplementary Conditions and other Division 01 Specification Sections, are complimentary; they include and apply to this Section

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for warranties required by the Contract Documents, including manufacturer's standard warranties on products and special warranties.

B. Refer to the General Conditions for terms of the Contractor's period for correction of the Work.

C. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 01 Section 01 33 00 "Submittal Procedures" specifies procedures for submitting warranties.

2. Division 01 Section 01 77 00 "Closeout Procedures" specifies contract closeout procedures.

3. Division 01 Section 01 78 23 "Operation and Maintenance Data- " specifies required operation and maintenance data.

4. Divisions 02 through 49 Sections for specific requirements for warranties on products and installations specified to be warranted.

D. Certifications and other commitments and agreements for continuing services to Owner are specified elsewhere in the Contract Documents.

E. Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products. Manufacturer's disclaimers and limitations on product warranties do not relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor.

1.3 WARRANTY REQUIREMENTS

A. Related Damages and Losses: When correcting failed or damaged warranted construction, remove and replace construction that has been damaged as a result of such failure or must be removed and replaced to provide access for correction of warranted construction.

B. Reinstatement of Warranty: When Work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.

C. Replacement Cost: Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of the Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective Work regardless of whether the Owner has benefited from use of the Work through a portion of its anticipated useful service life.

D. Owner's Recourse: Expressed warranties made to the Owner are in addition to implied warranties and shall not limit the duties, obligations, rights, and remedies otherwise available under the law. Expressed warranty periods shall not be interpreted as limitations on the time in which the Owner can enforce such other duties, obligations, rights, or remedies.

1. Rejection of Warranties: The Owner reserves the right to reject warranties and to limit selection to products with warranties not in conflict with requirements of the Contract Documents.

E. Where the Contract Documents require a special warranty, or similar commitment on the Work or part of the Work, the Owner reserves the right to refuse to accept the Work, until the Contractor presents evidence that entities required to countersign such commitments are willing to do so.

F. The Contractor shall guarantee ALL materials and workmanship for a period of 18 months from the date of Substantial Completion of the Work, AND in addition as part of the Base Bid, the Contractor shall furnish the warranties listed below. Submit four (4) copies of each to the Construction

ADDENDUM 2, Item 3

Administrator in the supplier's standard form or in the form given below if there is no standard form available.

1. Warranty Periods: Warranty periods specified herein shall commence to run from the Date of Substantial Completion unless otherwise specified.

Specification / Warranty Table

Item No.	Section No.		Specification Product/Warranty
1.	03	30 00	Floor Sealer: 5 Years: material and workmanship.
2.	05	01 13	Factory-Applied Metal Coatings: 20 Years: corrosion protection 20 Years: applied finish
3.	07	31 13	Asphalt Shingles 30 Years: Materials, prorated, with first 5 years nonprorated; 5 Years: Shingles to resist blow-off or damage caused by wind speeds up to 70 mi/hr 10 Years: Against discoloration by algae; 10 Years: Workmanship. 5 Years: Roofing installer's warranty for materials and workmanship.
4.	07	71 00	Manufactured Roof Specialties 20 Years: for fluorocarbon finish
5.	07	72 00	Roof Accessories: 5 Years: product and installation, including weathertightness.
6.	07	92 00	Joint Sealants: 2 Years: installers Warranty for repair/replacement of sealants that do not comply with specified requirements 20 Years: manufacturer's warranty for materials
7.	08	14 16	Metal (personnel) doors: Life of Building against corrosion
8.	08	33 23	Overhead Coiling Doors 3 Years: warranty against failure to meet performance requirements, structural failures, faulty operation of coiling doors and operator, and deterioration of metal, metal finishes and other materials beyond normal wear and tear.
9.	08	71 00	Door Hardware: 10 Years: Closers 3 Years: Exit Devices Life of the Building: Hinges 10 Years: Continuous Hinges
10.	10	11 00	Visual Display Units Life of the building, materials and workmanship
11.	10	14 36	Signage 5 Years: materials, workmanship and performance
12.	10	28 13	Toilet and Bath Accessories 5 Years: materials, workmanship and performance
13.	10	44 00	Fire Protection Specialties 6 Years: materials, workmanship and performance
14.	10	51 13	Metal Lockers 2 Years: materials and workmanship
15.	11	68 43	Scoreboard 5 Years: Advanced exchange parts warranty 5 Years: on-site labor warranty

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16	12	93 00	Site Furnishings	
			3	Years: materials and workmanship: Trash and Recycle Receptacles
17.	23	07 00	HVAC Insulation	
			10	Years: materials and workmanship
18.	23	09 13	Instrumentation and Control for HVAC	
			2	Years: materials, workmanship and installation
19.	23	31 13	Metal Ducts	
			12	Years: materials and workmanship: positive pressure chimney
20.	26	50 00	Lighting	
			5	Years: materials, workmanship and installation
21	32	13 13	Concrete Paving	
			10	Years: materials and workmanship: Detectable Warning Square Cast Iron Paver
			18	Months: materials and workmanship: Two-Component Stair Nosing Systems
22	32	18 23	Synthetic Field Surfacing	
			8	Years: Synthetic turf surfacing: materials and workmanship
			8	Years: Synthetic turf surfacing: Pre-paid third party insured warranty
			25	Years: Shock pad: product warranty
23.	32	18 33	Synthetic Track Surfacing	
			5	Years: Materials and workmanship: Track surfacing
24.	32	31 13	Chain Link Fences and Gates	
			15	Years: Metals and finishes.
25	32	92 00	Turf and Grasses	
			18	Months: satisfactory Seeded Lawn Tur
			18	Months: satisfactory Basin Erosion Control/Restoration Mix
			18	Months: satisfactory Basin Wetmix
26	32	93 00	Plants	
			18	Months: trees, shrubs, vines and ornamental grasses
			18	Months: ground covers, biennials, perennials and other plants

G. Submit certification that finish materials are fire rated as specified.

H. Form of Guarantees and Warranties:

Commissioner
Department of Construction Services
165 Capitol Avenue
Hartford, Connecticut 06106

(Project Title and Number)

I (We) hereby guarantee and warranty)

the _____ work on the referenced project for a period of _____ years

beginning _____, 20___ against failures of workmanship and materials in accordance

with the requirements of Section ____, Page ____, Paragraph ____, of the Specifications.

Signed	Installing Contractor
Contractor's	
(or authorized agent)	

ADDENDUM 2, Item 3

I. Bonds shall be by approved Surety Companies, made out to the Commissioner, Department of Construction Services, on company's standard form.

J. Guarantees, warranties or bonds supplied by Subcontractors, Suppliers or Manufacturers shall reference the project name, number, and location and be certified by the Contractor to be for the product and installation on the project and must be countersigned by the Contractor.

1.4 SUBMITTALS

A. Submit written warranties prior to the date certified for Substantial Completion. If the Architect's Certificate of Substantial Completion designates a commencement date for warranties other than the date of Substantial Completion for the Work, or a designated portion of the Work, submit written warranties upon request of the Architect.

B. Forms for special warranties are included in this Section. Prepare a written document utilizing the appropriate form, ready for execution by the Contractor, or by the, subcontractor, supplier, or manufacturer. Submit a draft to the Owner, through the Construction Administrator, for approval prior to final execution.

C. 1. Refer to Divisions 02 through 49 Sections for specific content requirements and particular requirements for submitting special warranties.

D. Form of Submittal: At Final Completion compile two (2) copies of each required warranty properly executed by the Contractor, or by the subcontractor, supplier, or manufacturer. Organize the warranty documents into an orderly sequence based on the table of contents of the Project Manual.

E. Bind warranties and bonds in heavy-duty, commercial-quality, durable 3-ring, vinyl-covered loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.

F. Provide heavy paper dividers with celluloid covered tabs for each separate warranty. Mark the 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 the Installer.

G. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project title or name, and name of the Contractor.

H. When warranted construction requires operation and maintenance manuals, provide additional copies of each required warranty, as necessary, for inclusion in each required manual.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION (NOT APPLICABLE)

END OF SECTION 01 78 30

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The General Provisions of the Contract, including General and Supplementary Conditions and Division 1, General Requirements, apply to the work specified in this Section.

B. Section 260000, General Electrical, shall also govern the work under this Section.

C. Section 260500, Basic Electrical Materials & Methods, includes requirements that are binding on this Section.

D. Examine all drawings, data, and coordinate the work of this Section with all related and adjoining work.

1.2 WORK INCLUDED

A. This section includes electrical & field lighting systems as specified herein.

1.3 REFERENCES

A. IES RP-6-2015, Current Recommended Practice for Sports Lighting, current edition

1.4 DEFINITIONS

A. Coefficient of variance (CV): A measure of uniformity. The formula for calculating CV values is given in IES RP-6, section 2.2.2 (page 3).

B. Uniformity gradient (UG): A measure of uniformity. UG is a measure of the rate of change of illuminance expressed as a ratio between the illuminance level of adjacent measuring points on a uniform grid

C. Primary playing area: An area including the playing field and extending 15 feet beyond the boundaries of the playing field in all directions.

1.5 SUBMITTALS

A. The submittal package shall include product data on the following:
   Controls
   Luminaires
   Pole assemblies
   Engineered foundation
   Waveform Corrector
   Wireless Control System

B. The submittal shall include the following shop drawings before construction:

1. The supplier shall supply drawings for each pole foundation. Drawings shall be sealed and signed by a professional engineer licensed in the **State of Connecticut**. Drawings shall include depth, diameter, and reinforcement.

2. The manufacturer shall submit a computer derived lighting plan showing the point-by-point horizontal maintained illuminance levels. The design is based on a maintained average illuminance level of 50 footcandles.

   Lighting calculations shall be run using a 0.90 LLF.

   Glare and spill control to be controlled by glare free lenses designed to provide direct light on field without stray light outside the specific fixture design beam spread.

3. The manufacturer shall submit a computer derived lighting plan showing the point-by-point horizontal initial illuminance levels.

4. The two above shop drawings shall indicate illuminance levels on a 30 foot by 30 foot square grid. The grid shall be oriented such that one of the calculation points is offset fifteen feet in each direction from a point at the midpoint of the playing field.

5. In addition to the point-by-point illuminance levels, each of the two above shop drawings shall indicate the following:
   The maximum to minimum ratio of the primary playing area.
   The coefficient of variance of the primary playing area.
   The greatest uniformity gradient in the primary playing area.
   The mounting height to the lowest row of the luminaires.
   The number of luminaires used at each pole or location.
   The kilowatt consumption of the lighting system.
   The lamp lumens used in the calculations.

6. Light aiming point plan: The contractor shall submit an aiming plan indicating the horizontal degree setting and the vertical degree setting of each fixture on each of the pole assemblies.

7. A drawing or cut sheet of the luminaire assembly and its interface with the required poles.

1.7 QUALITY ASSURANCE

A. Bidders who do not currently possess the necessary qualifications, trained and experienced personnel, financial capacity, and meet the other requirements herein described will be disqualified.

B. The contractor that installs the sports lighting system shall have been in business at least five consecutive years under the same name and shall have installed, under that name, at least ten sports lighting systems similar to this project.

C. The contractor shall be fully experienced in the installation of the lighting systems as herein specified, and shall furnish with the bid an itemized list of the installations of this type. The list shall include the name of the project, date of completion, the amount of the contract, the name, and telephone number of the person to contact for reference.

D. The Sports Lighting Supplier shall be dedicated to sports lighting with in-house engineering, sales and support personnel. Supplier shall maintain inventory and personnel who are qualified to supervise the installation, to be responsible that the system is installed as submitted, to conduct system start up, instruct the Owners representatives in the proper operation of the system and provide service throughout the warranty period.

E. The Owner may make such investigations as he deems necessary to determine the ability of the bidder to perform the work, and the bidder shall furnish to the Owner all such information and data for this purpose as the Owner may request. The Owner reserves the right to reject any bid if the evidence submitted by, or investigation of, such bidder fails to satisfy the Owner that such bidder is properly qualified to carry out the obligations of the contract and to complete the work contemplated therein. Conditional bids will not be accepted.

F. Before using the bid of a subcontractor as part of his bid, the General Contractor shall satisfy himself that the proposed subcontractor can satisfy all of the requirements expressed above. The Owner reserves the right to reject any bid if the evidence submitted by, or investigation of, such bidder fails to satisfy the Owner that the bidder and/or any subcontractor he proposes can properly qualify to carry out the obligation of any part of the contract, and to complete the work contemplated therein.

G. The ability of any bidder to obtain plans and provide a performance bond shall not be regarded as the sole qualification of such bidder's competency and responsibility to meet the requirements and obligations of the contract.

H. Any bidder who bids products that do not meet specifications will be rejected. If bidder desires to propose alternate products, they must be submitted(per submittal section of bid specifications) for approval a minimum of 10 days prior to bid. Acceptable alternates will be approved by written addendum a minimum of 5 days prior to bid date.

I. All materials furnished under this Contract shall be new, free from defects of any kind, of the quality and design hereinafter specified, and shall conform to the standards of Underwriter's Laboratories Inc., except for equipment which U.L. does not list or provide label service.

1.8 WARRANTY

A. Light System Maintenance Free Warranty:

1. Lighting Manufacturer must repair or replace any part of the sports lighting fixture or wiring that proves to be defective for a period of 10 years. Warranty must cover the cost for both labor and material. Warranty also guarantees light levels, aiming and energy consumption. Energy consumption will not increase as the system ages.

B. Structural Warranty:

1. Lighting Manufacturer must repair or replace any structural component that proves to be defective for a period of 10 years. Warranty must cover both parts and labor.

C. Manufacturer’s Warranty:

1. Lighting Manufacturer must maintain specifically funded financial reserves to assure fulfillment of the warranty for the full term. Warranty excludes fuses, storm damage,

vandalism, abuse and unauthorized repairs or alterations.

PART 2 - PRODUCTS

2.1 MANUFACTURED UNITS

A. Pole Foundations:

1. The pole foundations shall be designed for allowable stresses in accordance with latest AASHTO standards. Foundation must be designed by a Structural Engineer Licensed in the State of Connecticut. Installation based on wind speed criteria indicated on the drawings.

B. Sports Lighting Poles:

1. The sports lighting pole system shall consist of galvanized steel poles with a factory pre-wired crossarm assembly. All wiring/connections should be factory assembled from the fixture mounting location to the base of the pole. Strain relief device(s) must be factory installed in pre-wired crossarm assembly to ensure no weight or tension is placed on electrical connections.

2. The sports lighting pole structure shall consist of a modular pole assembly. This shall consist of no more than two shaft components.

3. The entire sports lighting system (pole structure, wiring and fixtures) must be supplied by a single Company who underwrites warranty. Combining components of various Manufacturers is not acceptable.

4. The pole shafts cross-section shall be round. The pole shaft sections shall be high-strength steel meeting the requirements of ASTM A572 GR65.

5. Pole shaft sections shall be hot dip galvanized in accordance with the requirements of ASTM A123 specifications. Each shaft assembly must be completely coated, inside and out, in a single dip. Double dipping will not be permitted in compliance to USGA (United States Galvanizing Association) recommended practices and procedures to prevent acid entrapment.

6. All crossarms shall be factory pre-wired and assembled. The sports lighting pole system shall consist of concrete encased galvanized steel poles with a factory pre-wired crossarm assembly. All wiring/connections should be factory assembled from the fixture mounting location to the base of the pole. No field connections, plugs or Brad-Harrison type connectors are allowed. Strain relief device(s) must be factory installed in pre-wired crossarm assembly to ensure no weight or tension is placed on electrical connections.

7. All factory pre-wiring must be done in a manner that requires no electrical connections inside the pole or crossarm assembly to be made in the field. Sports lighting supplier must provide warranty as outlined in these specifications.

C. LED Luminaire Requirements:

1. LED Luminaire must be an integral unit with maximum distance of 18 inches between power supply, driver and LED's to minimize power loss and EMI (electromagnetic interference). Entire fixture must be factory assembled and vacuum sealed.

2. Luminaire must be UL Certified for wet locations at an operating temperature range rating between -40°C and +65°C.

3. Luminaire must be 3rd party NEMA 4X certified based on NEMA 250 standards for external icing, hose-down, and 200-hours salt spray test.

4. Luminaire must be 3rd party tested and certified to UL 844 vibration requirements.

5. Luminaire must be 3rd party tested and certified to ANSI C136.31, 3G vibration requirements.

6. Luminaire must be IP66 certified tested to IEC 60598-1 standards to meet dust-tight and powerful water jet-proof test.

7. Luminaire shall have a Correlated Color Temperature (CCT) of 5600K with a tolerance of ±300K, and a CRI of >68.

8. Luminaire shall be third-party verified to be flicker free at super slow motion speeds up to 2400 FPS and use pulse width modulation greater than 18 Khz with a flicker index rating <.06.

9. Luminaire shall have lumen depreciation, L70 rating, greater than 100,000 hrs certified through CREE Tempo-24 Testing or equivalent.

10. Luminaire shall include an integrated and thermal isolated power supply with wide input range 208VAC-480VAC**,** remote power supply's or drivers shall be located within 24" of the LED board to eliminate Electromagnetic interference and higher Total Harmonic Distortion which will generate heat on power lines and components connected to the distribution system and cause premature failures of those components.

11. Integrated power supply shall have the following features:

    a. Efficiency - Greater than 95% from 208VAC to 480VAC with full load applied

    b. Hold Up Time – Greater than 25msec

    c. Restrike Time - Less than 3.0sec to meet UL924 Emergency Lighting requirements

    d. Thermal Sensors – Monitor temperature readings of critical components, and self-protect when conditions exceeded, and report conditions wirelessly to remote site

    e. Ultra Low Standby Power – Less than 0.20% Standby power consumed with primary output disabled

ADDENDUM 2, Item 4

f. In-field Upgradable – remote wireless interface to program and update firmware/software.

12. Luminaire must have a fully integrated health telemetry capability.

13. Luminaire shall weigh less than 50lbs, including power supply, shade, bracket, and RF system.

14. Luminaire shall have an EPA of 1.4 square feet or less.

15. Luminaire shall have a power factor greater than 0.98 @ 277VAC and 0.97 @480VAC.

16. Luminaire shall have a THD (Total Harmonic Distortion) Less than 10% at 240VAC with full load and less than 14% at 480VAC at full load.

17. Luminaire must have an integrated pressure and humidity sensor.

18. Luminaire must have an integrated accelerator for aiming, commissioning, and feedback on light positioning.

19. Luminaire shall include custom lensing injection molded from optical grade, impact resistant lens with a UV additive to provide more than 25 years of long-term sunlight exposure.

18. Luminaire lensing shall be TIR (Total Internal Reflection) based.

19. Luminaire shall be constructed as a single pressure cavity vessel system. Enclosure shall include a breathable vent for pressure fluctuation reduction and increased seal life.

20. Aluminum shall be chromate conversion coated and then two-stage architectural grade powder coated for long term resistance to corrosion and UV exposure.

21. Luminaire shall include separate control cards to current balance each LED array into no less than 5 strings for effective lifetime management

D. Wireless Control System

1. Wireless control system shall provide local control and monitoring of the LED fixtures via a secure, self-forming, self-healing mesh network.

2. Wireless control system shall be utilized to switch lights on/off as well as dimming the system to specified levels with the Wireless control Hub.

3. Wireless control system shall have the capability to link to external devices such as smartphones and tablets as well as desktop and laptop systems via Bluetooth, wifi, LAN or cellular connection.

4. System shall be FCC/IC certified.

5. System shall be capable of storing power data, behaviors, alarms and critical events locally for maintenance and troubleshooting.

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PART 3 - EXECUTION

3.1 DELIVERY

A. The entire sports lighting system shall be delivered to the jobsite by the sports lighting supplier. All material (poles, fixtures, crossarm assemblies, etc) shall arrive the same day. The supplier shall off-load all material and stage required material at each pole location to eliminate possibility of lost or damaged material.

3.2 ERECTION

A. The erection of the poles shall be in accordance with the manufacturer's instructions.

B. The installation of the light fixtures shall be in accordance with the manufacturer's instructions.

3.3 CONSTRUCTION

A. Interface with Other Work:

1. Grounding: Each pole shall be grounded. The ground resistance shall be no less than 2.5 ohms. Ground terminals shall be located not less than 2 feet from the pole.

3.4 FIELD QUALITY CONTROL

A. Site Tests:

1. Testing for acceptance shall be by the Sports Lighting Supplier.

2. Test methods, instruments, and test intervals shall meet the approval of the Owners representative prior to testing.

3. Testing Equipment: Testing equipment for measurement of footcandle levels shall be performed using a Konica Minolta T-10 Illuminance Meter. Supplier must show proof of calibration prior to testing as required by the manufacturer. Accuracy shall be ± 4% or less of recording. Measuring functions shall be in footcandles.

4. Readings shall be recorded for each point and the results confirmed by Owner and/or Engineer.

5. Horizontal illuminance readings shall be taken in accordance with "IES Standard for Photometric Measurement of Area and Sports Lighting Installations".

6. Measurements shall be taken at 36" inches above grade, with meter held horizontally. Dark clothing shall be worn by individuals performing test.

7. The contractor shall take voltage and current readings at each pole base during the time of the test for the purpose of ascertaining the approximate fixture operating condition. Voltage at the pole base shall be adjusted within ± 5% of rated ballast voltage.

8. The contractor shall provide stakes or other identifiable markings at all test points on the field at the time of the test.

9. The measured values shall be within plus or minus ten percent of the calculated values indicated on the computer derived lighting plan of the initial illuminance levels.

10. Failure to meet criteria shall require that the fixtures be re-aimed and retested and added to until satisfactory results are obtained. Any expense of re-aiming, subsequent retesting additional fixtures and installation, if any, shall be borne by the supplier with no additional cost to the Owner, Architect or Engineer.

3.5 ADJUSTING

A. Apparent "hot spots" or "dark spots" shall be eliminated by further fixture adjustment as required.

B. If in the judgment of the Owner's Representative, the manufacturers computed results cannot be obtained, this contractor shall furnish and install additional fixtures, wire, conduit, breakers, etc., as required to achieve the manufacturers predicted results at no additional cost to the Owner, Architect or Engineer.

END OF SECTION 26 56 19