



# **Volume 1 of 1 Project Manual**

**Roof Replacement and Weatherproofing  
460 / 470 Capitol Avenue, Hartford, CT  
Project No.: BI-2B-433**

**Prepared By:  
Gale Consultants, Inc.  
703 Hebron Avenue  
Glastonbury, CT 06033**

**Josh Geballe – Commissioner**

**State of Connecticut  
Department of Administrative Services  
Construction Services  
450 Columbus Boulevard  
Hartford, CT 06103**

**Project Manual Date: December 3, 2018**



**FOR YOUR INFORMATION**

**IMPORTANT NOTICE**

**From The State of Connecticut  
Department of Administrative Services - Construction Services  
Office of Legal Affairs, Policy, and Procurement**

**THIS PROJECT MANUAL CONTAINS NEW REPORTING AND CONTRACTING REQUIREMENTS:**

**NEW REPORTING REQUIREMENTS FOR CONTRACTOR AND SUBCONTRACTOR PAYMENTS:**

- For compliance with the Connecticut General Statutes Sections 4b-95 and 49-41, the Department of Administrative Services-Construction Services (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, BizNet, each month and enter payments they have received from the state, from the Contractor, or from a higher tier Subcontractor (as applicable).
- The process is described as follows: The state will pay the Contractor on a monthly basis 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.
- Detailed instructions can be found in the DAS/CS publication, "**6002 Instructions to Contractors/Subcontractors for Entering Payments in BizNet**", available for download by going to the DAS Homepage ([www.ct.gov/DAS](http://www.ct.gov/DAS)) and selecting Doing Business With The State > State Building Construction > Publications and Forms > DAS Construction Services Library > 6000 Series.

**NEW CONTRACTING REQUIREMENTS FOR CONTRACTOR AND SUBCONTRACTOR PAYMENTS:**

- 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, BizNet, for work performed or purchases made in relation to state projects.

**THE FOLLOWING DOCUMENTS HAVE BEEN REVISED TO REFLECT THE NEW REQUIREMENTS:**


- Section 00 11 16 Invitation to Bid;
- Section 00 21 13 Instructions to Bidders (Subsection 3.13);
- Section 00 41 10 Bid Package Submittal Requirements; and
- Section 01 11 00 Summary of Work.

**END**



<b>Project Title:</b>	Roof Replacement and Weatherproofing
<b>Project Location:</b>	460 / 470 Capitol Avenue, Hartford, Connecticut
<b>Project Number:</b>	BI-2B-433
<b>Architect/Engineer:</b>	Gale Consultants, Inc, Glastonbury, CT 06033

**SEALS, SIGNATURES, AND DATES OF DESIGN PROFESSIONALS OF RECORD**

<p>(Seal and Signature)</p>	<p><b>Architect Professional Certification:</b> I hereby certify that these documents were prepared or approved by me and that I am a duly registered Architect.</p> <p>_____ (Print Consultant Name)</p> <p>_____ License No.</p> <p>_____ Expiration Date</p>	 <p>(Seal and Signature)</p>	<p><b>Civil Engineer Professional Certification:</b> I hereby certify that these documents were prepared or approved by me and that I am a duly registered Professional Engineer.</p> <p>_____ <b>Marc A. Loranger</b> (Print Consultant Name) <b>0025170</b> License No. <b>01/31/2019</b> Expiration Date</p>
	<p>(Seal and Signature)</p>	<p><b>Structural Engineer Professional Certification:</b> I hereby certify that these documents were prepared or approved by me and that I am a duly registered Professional Engineer.</p> <p>_____ (Print Consultant Name)</p> <p>_____ License No.</p> <p>_____ Expiration Date</p>	<p>(Seal and Signature)</p>
<p>(Seal and Signature)</p>	<p><b>Mechanical Engineer Professional Certification:</b> I hereby certify that these documents were prepared or approved by me and that I am a duly registered Professional Engineer.</p> <p>_____ (Print Consultant Name)</p> <p>_____ License No.</p> <p>_____ Expiration Date</p>	<p>(Seal and Signature)</p>	<p><b>Fire-Protection Engineer Professional Certification:</b> I hereby certify that these documents were prepared or approved by me and that I am a duly registered Professional Engineer.</p> <p>_____ (Print Consultant Name)</p> <p>_____ License No.</p> <p>_____ Expiration Date</p>

**End of Section  
00 01 07 Seals Page**

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## VOLUME 1 of 1

## DIVISION 00 PROCUREMENT AND CONTRACTING REQUIREMENTS

Section No.	Title	Page Count	Not Used
00 01 01	Title Page	1	<input type="checkbox"/>
00 01 07	Seals Page	1	<input type="checkbox"/>
00 01 10	Table of Contents	6	<input type="checkbox"/>
00 01 15	List of Drawing Sheets	1	<input type="checkbox"/>
00 11 16	Invitation to Bid	4	<input type="checkbox"/>
00 21 13	<b>NEW:</b> Instructions To Bidders	17	<input type="checkbox"/>
00 25 13	<b>NEW:</b> Pre-Bid Meeting Agenda	4	<input type="checkbox"/>
00 30 00	General Statements for Available Information	4	<input type="checkbox"/>
00 30 10	General Statement for Existing Conditions Information		<input type="checkbox"/>
00 30 20	General Statement for Environmental Assessment Information		<input checked="" type="checkbox"/>
00 30 30	General Statement for Hazardous Building Materials Inspection and Inventory		<input type="checkbox"/>
00 30 40	General Statement for Subsurface Geotechnical Report		<input checked="" type="checkbox"/>
00 30 50	General Statement for Elevator Agreement		<input checked="" type="checkbox"/>
00 30 60	General Statement for FM Global Checklist for Roofing Systems		<input type="checkbox"/>
00 30 70	General Statement for "Statement of Special Inspections"		<input type="checkbox"/>
00 30 80	General Statement for Other Information		<input type="checkbox"/>
00 40 14	Certificate (of Authority) ( <i>Bidder uploads to BizNet</i> )	2	<input type="checkbox"/>
00 40 15	CT DAS Contractor Prequalification Forms ( <i>Bidder uploads to BizNet</i> )	4	<input type="checkbox"/>
00 41 00	Bid Proposal Form ( <i>Bidder uploads to BizNet</i> )	9	<input type="checkbox"/>
00 41 10	<b>NEW:</b> Bid Package Submittal Requirements	4	<input type="checkbox"/>
00 43 16	Standard Bid Bond ( <i>Bidder uploads to BizNet</i> )	1	<input type="checkbox"/>
00 45 14	General Contractor Bidder's Qualification Statement ( <i>Bidder uploads to BizNet</i> )	7	<input type="checkbox"/>
00 45 15	Objective Criteria Established for Evaluating Qualifications of Bidders	3	<input type="checkbox"/>
00 45 17	Named Subcontractor Bidder's Qualification Statement	7	<input type="checkbox"/>
00 52 03	Contract	3	<input type="checkbox"/>
00 52 73	Subcontract Agreement Form	3	<input type="checkbox"/>
00 62 16	Certificate of Insurance	1	<input type="checkbox"/>
00 62 16.1	Asbestos Attachment to Acord Form	1	<input type="checkbox"/>
00 72 13	General Conditions of the Contract for Construction – For Design-Bid-Build	25	<input type="checkbox"/>
00 72 13.1	Supplementary Conditions	2	<input type="checkbox"/>
00 73 27	Set-Aside Contractor Schedule – <i>SAMPLE</i>	1	<input type="checkbox"/>
00 73 38	CHRO Contract Compliance Regulations	7	<input type="checkbox"/>
00 73 44	Prevailing Wage Rates/Contractor's Wage Certification/Payroll Certification	35	<input type="checkbox"/>
00 73 63	CT DOC Security Requirements	3	<input checked="" type="checkbox"/>
00 92 10	Additional Forms To be Submitted After Bond Commission Funding Approval	7	<input type="checkbox"/>
00 92 30	Procedures Regarding Taxation for Nonresident General/Prime Contractor and Subcontractors	2	<input type="checkbox"/>

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**DIVISION 01 GENERAL REQUIREMENTS**

Section No.	Title	Page Count	Not Used
01 11 00	Summary of Work	10	<input type="checkbox"/>
01 20 00	Contract Considerations	2	<input type="checkbox"/>
01 23 13	Supplemental Bids		<input checked="" type="checkbox"/>
01 25 00	Substitution Procedures	6	<input type="checkbox"/>
01 26 00	Contract Modification Procedures	4	<input type="checkbox"/>
01 29 76	Progress Payment Procedures	6	<input type="checkbox"/>
01 31 00	Project Management and Coordination	4	<input type="checkbox"/>
01 31 19	Project Meetings	4	<input type="checkbox"/>
01 32 16	Construction Progress Schedules	4	<input type="checkbox"/>
01 32 16.13	CPM Schedules		<input checked="" type="checkbox"/>
01 32 33	Photographic Documentation	2	<input type="checkbox"/>
01 33 00	Submittal Procedures	8	<input type="checkbox"/>
01 35 16	Alteration Project Procedures	6	<input type="checkbox"/>
01 35 26	Government Safety Requirements	14	<input type="checkbox"/>
01 42 20	Reference Standards & Definitions	4	<input type="checkbox"/>
01 45 00	Quality Control	4	<input type="checkbox"/>
01 45 23.13	Testing for Indoor Air Quality, Baseline Indoor Air Quality, and Materials		<input checked="" type="checkbox"/>
01 50 00	Temporary Facilities & Controls	10	<input type="checkbox"/>
01 57 30	Indoor Environmental Control		<input checked="" type="checkbox"/>
01 57 40	Construction Indoor Air Quality Management Plan		<input checked="" type="checkbox"/>
01 60 00	Product Requirements	4	<input type="checkbox"/>
01 71 23	Field Engineering		<input checked="" type="checkbox"/>
01 73 29	Cutting and Patching	4	<input type="checkbox"/>
01 74 19	Construction Waste Management & Disposal	6	<input type="checkbox"/>
01 75 00	Starting & Adjusting		<input checked="" type="checkbox"/>
01 77 00	Closeout Procedures	6	<input type="checkbox"/>
01 78 23	Operation & Maintenance Data	6	<input type="checkbox"/>
01 78 30	Warranties & Bonds	4	<input type="checkbox"/>
01 80 13	Sustainable Design Requirements		<input checked="" type="checkbox"/>
01 91 00	Commissioning		<input checked="" type="checkbox"/>



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**TECHNICAL SPECIFICATIONS**

**DIVISION 02** **EXISTING CONDITIONS**  Not Used

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02 41 00	SELECTIVE DEMOLITION	6
02 82 13	ASBESTOS CONTAINING ROOFING MATERIAL ABATEMENT	6
02 83 00	LEAD PAINT ACTIVITY	16
02 84 33	REMOVAL AND DISPOSAL OF PCBs	12

**DIVISION 03** **CONCRETE**  Not Used

Section No.	Title	Page Count
03 01 00	CONCRETE RESTORATION	12
03 30 00	CAST IN PLACE CONCRETE	10

**DIVISION 04** **MASONRY**  Not Used

Section No.	Title	Page Count
04 50 00	MASONRY	26

**DIVISION 05** **METALS**  Not Used

Section No.	Title	Page Count
05 50 00	MISCELLANEOUS METALS	8

**DIVISION 06** **WOOD, PLASTICS AND COMPOSITES**  Not Used

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06 10 00	ROUGH CARPENTRY	12

**DIVISION 07** **THERMAL AND MOISTURE PROTECTION**  Not Used

Section No.	Title	Page Count
07 52 00	ELASTOMERIC MEMBRANE ROOFING	26
07 62 00	SHEET METAL AND FLASHING	16
07 71 00	ROOF SPECIALTIES	6

**DIVISION 08** **OPENINGS**  Not Used

Section No.	Title	Page Count
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**DIVISION 09** **FINISHES**  Not Used

Section No.	Title	Page Count
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<b>DIVISION 10</b>	<b>SPECIALTIES</b>	Not Used <input type="checkbox"/>
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<b>Section No.</b>	<b>Title</b>	<b>Page Count</b>
10 75 16	FLAGPOLES	6

<b>DIVISION 11</b>	<b>EQUIPMENT</b>	Not Used <input checked="" type="checkbox"/>
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<b>Section No.</b>	<b>Title</b>	<b>Page Count</b>
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<b>DIVISION 12</b>	<b>FURNISHINGS</b>	Not Used <input checked="" type="checkbox"/>
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<b>Section No.</b>	<b>Title</b>	<b>Page Count</b>
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<b>DIVISION 13</b>	<b>SPECIAL CONSTRUCTION</b>	Not Used <input checked="" type="checkbox"/>
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<b>Section No.</b>	<b>Title</b>	<b>Page Count</b>
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<b>DIVISION 14</b>	<b>CONVEYING SYSTEMS</b>	Not Used <input checked="" type="checkbox"/>
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<b>Section No.</b>	<b>Title</b>	<b>Page Count</b>
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<b>DIVISION 15</b>	<b>RESERVED</b>	
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<b>DIVISION 16</b>	<b>RESERVED</b>	
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<b>DIVISION 17</b>	<b>RESERVED</b>	
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<b>DIVISION 18</b>	<b>RESERVED</b>	
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<b>DIVISION 19</b>	<b>RESERVED</b>	
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<b>DIVISION 20</b>	<b>RESERVED</b>	
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<b>DIVISION 21</b>	<b>FIRE SUPPRESSION</b>	Not Used <input checked="" type="checkbox"/>
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<b>Section No.</b>	<b>Title</b>	<b>Page Count</b>
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<b>DIVISION 22</b>	<b>PLUMBING</b>	Not Used <input type="checkbox"/>
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<b>Section No.</b>	<b>Title</b>	<b>Page Count</b>
22 20 00	PLUMBING	10

<b>DIVISION 23</b>	<b>HEATING, VENTILATING AND AIR CONDITIONING</b>	Not Used <input type="checkbox"/>
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<b>Section No.</b>	<b>Title</b>	<b>Page Count</b>
23 05 00	MECHANICAL	12

<b>DIVISION 24</b>	<b>RESERVED</b>	
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<b>DIVISION 25</b>	<b>INTEGRATED AUTOMATION</b>	<b>Not Used</b> <input checked="" type="checkbox"/>
<b>Section No.</b>	<b>Title</b>	<b>Page Count</b>

<b>DIVISION 26</b>	<b>ELECTRICAL</b>	<b>Not Used</b> <input checked="" type="checkbox"/>
<b>Section No.</b>	<b>Title</b>	<b>Page Count</b>
26 05 02	ELECTRICAL	12

<b>DIVISION 27</b>	<b>COMMUNICATIONS</b>	<b>Not Used</b> <input checked="" type="checkbox"/>
<b>Section No.</b>	<b>Title</b>	<b>Page Count</b>

<b>DIVISION 28</b>	<b>ELECTRONIC SAFETY AND SECURITY</b>	<b>Not Used</b> <input checked="" type="checkbox"/>
<b>Section No.</b>	<b>Title</b>	<b>Page Count</b>

<b>DIVISION 29</b>	<b>RESERVED</b>	
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<b>DIVISION 30</b>	<b>RESERVED</b>	
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<b>DIVISION 31</b>	<b>EARTHWORK</b>	<b>Not Used</b> <input type="checkbox"/>
<b>Section No.</b>	<b>Title</b>	<b>Page Count</b>
31 00 00	SITE WORK	14

<b>DIVISION 32</b>	<b>EXTERIOR IMPROVEMENTS</b>	<b>Not Used</b> <input checked="" type="checkbox"/>
<b>Section No.</b>	<b>Title</b>	<b>Page Count</b>

<b>DIVISION 33</b>	<b>UTILITIES</b>	<b>Not Used</b> <input checked="" type="checkbox"/>
<b>Section No.</b>	<b>Title</b>	<b>Page Count</b>

<b>DIVISION 34</b>	<b>TRANSPORTATION</b>	<b>Not Used</b> <input checked="" type="checkbox"/>
<b>Section No.</b>	<b>Title</b>	<b>Page Count</b>

<b>DIVISION 35</b>	<b>WATERWAYS AND MARINE</b>	<b>Not Used</b> <input checked="" type="checkbox"/>
<b>Section No.</b>	<b>Title</b>	<b>Page Count</b>

<b>DIVISION 36</b>	<b>RESERVED</b>	
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<b>DIVISION 37</b>	<b>RESERVED</b>	
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<b>DIVISION 38</b>	<b>RESERVED</b>	
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DIVISION 39	RESERVED		
DIVISION 40	PROCESS INTEGRATION		Not Used <input checked="" type="checkbox"/>
Section No.	Title		Page Count
DIVISION 41	MATERIAL PROCESSING		Not Used <input checked="" type="checkbox"/>
Section No.	Title		Page Count
DIVISION 42	PROCESS HEATING, COOLING, AND DRYING		Not Used <input checked="" type="checkbox"/>
Section No.	Title		Page Count
DIVISION 43	PROCESS GAS AND LIQUID HANDLING, PURIFICATION, AND STORAGE EQUIPMENT		Not Used <input checked="" type="checkbox"/>
Section No.	Title		Page Count
DIVISION 44	POLLUTION CONTROL EQUIPMENT		Not Used <input checked="" type="checkbox"/>
Section No.	Title		Page Count
DIVISION 45	INDUSTRY SPECIFIC MANUFACTURING EQUIPMENT		Not Used <input checked="" type="checkbox"/>
Section No.	Title		Page Count
DIVISION 46	RESERVED		
DIVISION 47	RESERVED		
DIVISION 48	RESERVED		
DIVISION 49	RESERVED		
DIVISION 50	PROJECT-SPECIFIC AVAILABLE INFORMATION	Page Count	Not Used <input type="checkbox"/>
50 10 00	Existing Conditions Asphalt Shingles	4	<input type="checkbox"/>
50 20 00	Environmental Assessment Information		<input checked="" type="checkbox"/>
50 30 00	Hazardous Building Materials Inspection and Inventory	36	<input type="checkbox"/>
50 40 00	Subsurface Geotechnical Report		<input checked="" type="checkbox"/>
50 50 00	Elevator Agreement		<input checked="" type="checkbox"/>
50 60 00	FM Global Checklist for Roofing Systems	4	<input type="checkbox"/>
50 70 00	FM Global Red Tag System and Hot Work	30	<input type="checkbox"/>

<b>List of Drawing Sheets</b>	
<b>Sheet No.</b>	<b>Title</b>
–	Cover Sheet
<b>G101</b>	General Notes and Legends
<b>G102</b>	Site Plan
<b>G103</b>	Flag Pole Plan
<b>A101</b>	Overall Roof Area Plan
<b>A102</b>	Floor Plan
<b>A103</b>	Roof Area Plan
<b>A104</b>	Floor Plan
<b>A105</b>	Roof Area Plan
<b>A106</b>	Roof Area Plan
<b>A201</b>	Photographic Elevations
<b>A202</b>	Photographic Elevations
<b>A203</b>	Photographic Elevations
<b>A204</b>	Photographic Elevations
<b>A205</b>	Photographic Elevations
<b>A206</b>	Photographic Elevations
<b>A207</b>	Photographic Elevations
<b>A501</b>	Details
<b>A502</b>	Details
<b>A503</b>	Details
<b>A504</b>	Details
<b>A505</b>	Details
<b>A506</b>	Details
<b>A507</b>	Details

**End of Section**  
**00 01 15 List of Drawing Sheets**





Advertisement No.:	19-07	Advertisement Date:	February 15, 2019
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<p><b>INVITATION TO BID</b></p> <p>Connecticut Department of Administrative Services (DAS) Construction Services (CS) Office of Legal Affairs, Policy and Procurement 450 Columbus Blvd, Suite 1302, Hartford, CT 06103-1835</p>
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<b>Find Invitations to Bid on the State Contracting Portal:</b>	Go to the <b>DAS website</b> <a href="http://www.ct.gov/das">www.ct.gov/das</a> Click on “ <b>State Contracting Portal</b> ”; Select “ <b>Administrative Services, Construction Services</b> ”; Select the appropriate <b>Invitation to Bid</b> .
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<b>Instructions for On-Line Bidding:</b>	Follow the instructions in <a href="http://portal.ct.gov/-/media/DAS/Construction-Services/DAS-CS-Library/6000-Series/6001-Construction-On-Line-Bidding-Instructions.pdf">6001 Construction On-line Bidding Instructions</a> . ( <a href="http://portal.ct.gov/-/media/DAS/Construction-Services/DAS-CS-Library/6000-Series/6001-Construction-On-Line-Bidding-Instructions.pdf">http://portal.ct.gov/-/media/DAS/Construction-Services/DAS-CS-Library/6000-Series/6001-Construction-On-Line-Bidding-Instructions.pdf</a> ) For questions, call 860-713-5794.
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<b>Date and Time of Bid Opening:</b>	<table border="1"> <tr> <td style="padding: 5px;"><b>APRIL</b> <i>(Month)</i></td> <td style="padding: 5px;"><b>3</b> <i>(Day)</i></td> <td style="padding: 5px;"><b>2019</b> <i>(Year)</i></td> </tr> </table>	<b>APRIL</b> <i>(Month)</i>	<b>3</b> <i>(Day)</i>	<b>2019</b> <i>(Year)</i>	<b>Time:</b>	<table border="1"> <tr> <td style="padding: 5px;"><b>1:00</b> <i>(ET)</i></td> <td style="padding: 5px;"><b>PM</b></td> </tr> </table>	<b>1:00</b> <i>(ET)</i>	<b>PM</b>
<b>APRIL</b> <i>(Month)</i>	<b>3</b> <i>(Day)</i>	<b>2019</b> <i>(Year)</i>						
<b>1:00</b> <i>(ET)</i>	<b>PM</b>							

<b>This Invitation to Bid is for the following Project:</b>
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<b>Construction Costs:</b>	Greater Than \$500,000		
<b>Bidding Limited To:</b>	Contractors Prequalified by DAS for General Building Construction (Group A)		
<b>Threshold Limits:</b> (C.G.S. §29-276b)	This Project DOES NOT exceed Threshold Limits.		
<b>Project Title:</b>	Roof Replacement and Weatherproofing		
<b>Project Location:</b>	460/470 Capitol Avenue, Hartford, CT		
<b>Project Number:</b>	BI-2B-433		
<b>Project Description:</b>	Interior/exterior protection; Removal of existing roof to structural decks and installation of new roof complete; Mods/restoration of roof drains; Mods to existing curbs, utilities, and mechanical equipment; Mods to existing stairs; Masonry restoration skylights; Complete removal of abandoned Rooftop equipment; modifications to existing Chill Water lines; safety rails; Two (2) new flag poles		
<b>Work Includes But Is Not Limited To The Following:</b>	Selective Demolition and Protection; Concrete Masonry; Metals; Woods, plastics, composites; thermal and moisture protection; plumbing, mechanical, flagpoles, sitework, abatement; FM Global Submissions and required testing		
<b>Date DAS Began Planning Project:</b>	2/28/2016		
<b>Special Requirements:</b>	N/A		
<b>Cost Estimate Range:</b>	\$ 1,397,778.	<b>To</b>	\$ 1,544,912.
<b>Date Plans &amp; Specs Ready:</b>	February 20, 2019		
<b>Plans and Specs Download:</b>	Plans and Specs are available for electronic download on the DAS State Contracting Portal.		



Advertisement No.:	19-07	Advertisement Date:	February 15, 2019
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<b>Invitation to Bid (continued)</b>
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<b>Contract Time Allowed:</b>	<b>Calendar Days:</b>	120
<b>Liquidated Damages:</b>	\$ 1,815.00	Per Calendar Day Beyond Substantial Completion.
	\$ 1,815.00	Per Calendar Day Beyond 90 days After Substantial Completion
<b>Pre-Bid Meeting Date:</b>	February 27, 2019	
	<input type="checkbox"/>	Bidders are <b>strongly encouraged</b> to attend the Pre-Bid Meeting.
	<input checked="" type="checkbox"/>	Bidders are <b>required</b> to attend a <b>MANDATORY</b> Pre-Bid Meeting.
<b>Pre-Bid Meeting Time:</b>	10:00	<input checked="" type="checkbox"/> <b>AM</b> <input type="checkbox"/> <b>PM</b>
<b>Pre-Bid Meeting Location:</b>	460/470 Capitol Avenue, Hartford, CT – Meet at the loading dock – conference room	
<b>Pre-Bid Meeting Contact:</b>	<b>DAS/CS Project Manager:</b>	Ronald Wilfinger
	<b>Phone No.:</b>	860.713.5648
<b>Pre-Bid Meeting Registration:</b>	At the Pre-Bid Meeting, all prospective bidders shall <i>sign</i> his or her name on the <b>official roster</b> and <i>list</i> the name and address of the company he or she represents. For <b>MANDATORY</b> Pre-Bid Meetings, this shall be done no later than the designated <b>start time</b> of the Pre-Bid Meeting. <b>No</b> attendee will be allowed to register <i>after</i> the advertised start time. <b>Bids</b> submitted by contractors who have <i>not properly</i> registered and attended the <b>MANDATORY</b> Pre-Bid Meeting <i>shall be rejected</i> as <b>non-responsive</b> . See <b>Section 00 25 13 Pre-Bid Meeting Agenda</b> for additional details.	
<b>Subcontractor and/or Supplier Small Business Enterprise (SBE) &amp; Minority Business Enterprise (MBE) Set-Aside Requirements:</b>	See 00 41 00 Bid Proposal Form	
<b>Bid Proposal Submission and Other Bid Submittal Requirements:</b>	See <b>Sections 00 21 13 Instructions to Bidders, 00 41 00 Bid Proposal Form, and 00 41 10 Bid Package Submittal Requirements</b> for Bid Proposal submission requirements, including requirements for Affidavits, Certifications, Addenda, Pre-Bid Equals and Substitution Requests, and other bidding documents.	
<b>Bid Upload and Bid Opening:</b>	Bids can be uploaded and edited electronically in BizNet <b>UNTIL 1:00 p.m.</b> on the <b>Bid Opening Date</b> and thereafter shall be locked down and publicly opened in the State Contracting Portal.	
<b>Bid Results:</b>	Within approximately two (2) days after the Bid Opening Date, the Bid Results will be posted on the State Contracting Portal.	
<b>Guide to the Code of Ethics For Current or Potential State Contractors (for contracts greater than \$500,000):</b>	Anyone seeking a contract with a value of more than \$500,000 shall electronically download the “ <b>Guide to the Code of Ethics For Current or Potential State Contractors</b> ” from the of Office of State Ethics (OSE) website <a href="http://www.ct.gov/ethics">www.ct.gov/ethics</a> , then click on the “ <b>Publications</b> ” link:	
<b>Prevailing Wage Rates:</b>	Prevailing wages are required on this project, in accordance with the schedule provided in the bid documents, pursuant to Connecticut General Statutes (C.G.S.) Section 31-53 (a) through (h), as amended.  Each contractor who is awarded a contract on or after October 1, 2002 shall be subject to provisions of C.G.S. § 31-55a concerning annual adjustments to prevailing wages.  Wage Rates will be posted each July 1st on the Department of Labor website <a href="http://www.ctdol.state.ct.us">www.ctdol.state.ct.us</a> . Such prevailing wage adjustment shall not be considered a matter for any contract amendment.	
<b>To access Executive Orders:</b>	Go to <a href="http://www.ct.gov">www.ct.gov</a> > Governor Ned Lamont > Executive Orders.	





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**Invitation to Bid (continued)**

**Important Notices:**

**UPDATED DOCUMENTS:**

Many **Division 00** and **Division 01** documents have been updated. Read all of the contents of the Project Manual *carefully!*

All Contractors are cautioned that any modifications or alterations made to either the Project Manual or any of the forms and documents contained herein may be just cause to **reject the bid!**

**NEW PROCESS FOR CONSTRUCTION STORMWATER GENERAL PERMIT:**

See Section 01 50 00 Temporary Facilities and Controls.

For all DAS/CS construction projects disturbing **one or more total acres of land area** on a site regardless of project phasing, the **Architect/Engineer** shall be responsible for filing a Department of Energy and Environmental Protection (DEEP) *General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (DEEP-WPED-GP-015)* registration and Stormwater Pollution Control Plan (SPCP) through the online DEEP ezFile Portal **prior** to bidding.

Once the **Contractor** is under contract with DAS/CS, and **prior** to the commencement of any construction activities, the Contractor (and all other contractors and subcontractors listed on the SPCP) shall assume responsibility for storm water pollution control and conform to the general permit obligations and requirements by **signing** the SPCP "Contractor Certification Statement" and License Transfer Form as directed by the Architect/Engineer.

At completion of the project, the Contractor shall file a Notice of Termination (DEP-PED-NOT-015) with the DEEP in order to terminate the Construction Stormwater General Permit. A project shall **only** be considered complete after 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.

**NEW PROCESS FOR CONTRACTOR AND SUBCONTRACTOR PAYMENTS REPORTING:**

See Section 00 21 13 Instructions to Bidders (Subsection 3.13) and Section 01 11 00 Summary of Work (Subsection 1.11).

For compliance with **C.G.S. § 4b-95 and 49-41**, 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, BizNet, **each month** and **enter payments** they have received from the state, from the Contractor, or from a higher tier Subcontractor (as applicable).

The process is described as follows: The state will pay the Contractor on a monthly basis 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.

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, BizNet, for work performed or purchases made in relation to state projects.

Detailed instructions can be found in the DAS/CS publication, "**6002 Instructions to Contractors/Subcontractors for Entering Payments in BizNet**", available for download by going to the DAS Homepage ([www.ct.gov/DAS](http://www.ct.gov/DAS)) and selecting Doing Business With The State > State Building Construction > Publications and Forms > DAS Construction Services Library > 6000 Series.

**IMPORTANT NOTE:** *The Commissioner of the CT Department of Administrative Services reserves the right to do any of the following without liability, including but not limited to: (a) waive technical defects in the bid proposal as he or she deems best for the interest of the State; (b) negotiate with a contractor in accordance with Connecticut General Statutes Section 4b-91; (c) reject any or all bids; (d) cancel the award or execution of any contract prior to the issuance of the "Notice To Proceed"; and (e) advertise for new bids.*



<b>Advertisement No.:</b>	<b>19-07</b>	<b>Advertisement Date:</b>	<b>February 15, 2019</b>
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<b>Invitation to Bid (continued)</b>
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<b>All Project Questions, Bid Questions, and Pre-Bid Equals and Substitution Requests must be submitted fourteen (14) Calendar Days prior to the Bid Due Date.</b>
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All <b>Project Questions</b> and Pre-Bid <b>Equals and Substitution Requests</b> must be emailed (not phoned) to the <b>Architect/Engineer</b> with a <b>copy</b> to the <b>Construction Administrator</b> and the <b>DAS/CS Project Manager</b> listed below.
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<b>Architect/Engineer:</b>	Gale Consultants, Inc.	Email:	mal@gainc.com
<b>Construction Administrator:</b>	Dwight Bolton	Email:	dwight@dh-bolton.com
<b>DAS/CS Project Manager:</b>	Ronald Wilfinger	Email:	Ronald.Wilfinger@ct.gov

All Bid Questions must be emailed to the DAS/CS Associate Fiscal Administrative Officer listed below.
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<b>DAS/CS Associate Fiscal Administrative Officer:</b>	Mellanee Walton	Email:	Mellanee.Walton@ct.gov
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## Instructions to Bidders

DAS | Construction Services | Office of Legal Affairs, Policy, and Procurement

### 1.0 General Bid Proposal Information

#### 1.1 On-Line Bidding:

1.1.1 The Department of Administrative Services (DAS) Construction Services (CS) has streamlined the Bid process by allowing contractors to submit their **Bid Package Documents on line** through the **State Contracting Portal** and **BizNet**. Rather than submitting paper Bid Package Documents, contractors simply respond to an **Invitation to Bid** on the **State Contracting Portal** by retrieving and uploading their documents electronically through their **BizNet** account. Once completed, the Bid Proposal must be **electronically signed prior** to the date and time of the **Bid Opening**. See **Page 1** of the **Invitation to Bid** for the **Date and Time of the Bid Opening**.

1.1.2 All Bidders shall **electronically** upload their **Bid Package Documents** to BizNet following the **instructions** in the DAS/CS publication, [6001 Construction On-line Bidding Instructions](#), available for download here: Go to the DAS Homepage ([www.ct.gov/DAS](http://www.ct.gov/DAS)), Doing Business With The State > State Building Construction > Publications and Forms > DAS Construction Services Library > 6000 Series > **6001 Construction On Line Bidding Instructions**. For questions, call 860-713-5794.

#### 1.2 Bid Opening:

All Bids shall be publicly opened in BizNet by the awarding authority as stated in **Section 00 11 16 Invitation to Bid**.

#### 1.3 Withdrawal of Bid:

Any **Bid** once uploaded into BizNet cannot be deleted. A Bid may only be **withdrawn** by uploading a written **Letter of Withdrawal** to BizNet using the "**Other Solicitation Document**" link **prior** to the date and time of the Bid Opening.

#### 1.4 Disqualification from Bidding:

Any contractor who violates any provision of **Connecticut General Statutes (C.G.S.) § 4b-95**, as revised, shall be **disqualified** from bidding on other contracts for a period not to exceed **twenty-four (24) months**, commencing from the date on which the violation is discovered, for each violation.

#### 1.5 Waive Minor Irregularities:

1.5.1 The awarding authority **shall** be authorized to **waive minor irregularities** which he or she considers in the best interest of the State, provided the reasons for any such waiver are stated in writing by the awarding authority and made a part of the contract file.

1.5.2 **No** such bid shall be rejected because of the failure to submit prices for, or information relating to, any item or items for which no specific space is provided in the bid form furnished by the awarding authority, but this sentence shall not be applicable to any failure to furnish prices or information required by **C.G.S. § 4b-95**, as revised, to be furnished in the bid form provided by the awarding authority.

#### 1.6 Minimum Percentage of Work:

The awarding authority **may** require in the **Bid Proposal Form** that the contractor agree to perform a stated, minimum percentage of work with its **own forces**, in accordance with **C.G.S. § 4b-95(b)**.

#### 1.7 Set-Aside Contracts:

The awarding authority **may also** require the contractor to set aside a portion of the contract for subcontractors who are eligible for **set-aside contracts**.

#### 1.8 Connecticut Sales And Use Taxes:

1.8.1 **All Bidders shall** familiarize themselves with the current statutes and regulations of the **Connecticut Department of Revenue Services (DRS)**, including the Regulations of Connecticut State Agencies (R.C.S.A.) §12-426-18 and all relevant state statutes. The tax on materials or supplies exempted by such statutes and regulations shall not be included as part of a bid. See the **Sales and Use Tax Exemption for Purchases by Qualifying Governmental Agencies (CERT-134)**, available for download from the DRS website ([www.ct.gov/drs](http://www.ct.gov/drs)) under "Exemption Certificates".

1.8.2 The State of Connecticut construction contract has the following tax exemptions: (1) Purchasing of materials which will be physically incorporated and become a permanent part of the project; and (2) Services that are resold by the contractor. For example, 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.

1.8.3 The following items are **not** exempt from taxes when used to fulfill a State of Connecticut construction contract: Tools, supplies and equipment used in fulfilling the construction contract.

<b>1.9 Union Labor:</b>	
Attention is called to the fact that there may or could be construction work carried on at the site by union labor. This fact must be kept in mind by all Bidders.	
<b>1.10 Rejection of Bids:</b>	
The awarding authority <i>shall reject</i> every such <b>Bid Proposal</b> , including but not limited to, the following reasons:	
<b>1.10.1</b>	A <b>Bid Proposal Form</b> that does <i>not</i> contain the signature of the bidder or its authorized representative.
<b>1.10.2</b>	A <b>Bid Proposal Form</b> that is <i>not</i> accompanied by the following documents in BizNet:
.1	<b>Section 00 43 16 Standard Bid Bond</b> , completed for <i>either</i> the <b>Bid Bond</b> option <i>or</i> <b>Certified Check</b> option;
.2	A <b>Certified Check</b> (if applicable) delivered to the DAS/CS Office of Legal Affairs, Policy, and Procurement <i>prior</i> to the date and time of the Bid Opening;
.3	<b>Section 00 45 14 General Contractor Bidder's Qualification Statement</b>
.4	A <b>DAS Contractor Prequalification Certificate</b> for the Bidder for Projects <i>greater</i> than <b>\$500,000</b> ;
.5	A <b>DAS Update (Bid) Statement</b> for the Bidder for Projects <i>greater</i> than <b>\$500,000</b> ;
.6	A <b>Gift and Campaign Contribution Certification – Office of Policy and Management (OPM) Ethics Form 1</b> ;
.7	A <b>Consulting Agreement Affidavit – OPM Ethics Form 5</b> . <b>NOTE: If the Bidder fails to submit or upload the Consulting Agreement Affidavit</b> required under C.G.S. § 4a-81, such bidder shall be <i>disqualified</i> and the award shall be made to the next lowest responsible qualified bidder or new bids or proposals shall be sought;
.8	An <b>Ethics Affidavit (Regarding State Ethics) – OPM Ethics Form 6</b> ;
.9	An <b>Iran Certification – OPM Ethics Form 7</b> .
<b>1.10.3</b>	A <b>Bid Proposal Form</b> that:
.1	Fails to <b>acknowledge</b> all <b>Addenda</b> in the space provided in the <b>Bid Proposal Form</b> ;
.2	Fails to <b>correctly list</b> the <b>Named Subcontractors</b> on the <b>Bid Proposal Form</b> ;
.3	Fails to <b>correctly state</b> a <b>Named Subcontractor's price</b> on the <b>Bid Proposal Form</b> ; and
.4	Fails to list <b>Named Subcontractors</b> who are <b>DAS Prequalified at the time of the bid</b> .
<b>1.10.4</b>	A <b>Bid Proposal Form</b> that is <i>not</i> submitted on the <b>forms furnished</b> for the specific project. <b>NOTE: In no event</b> will bids or changes in bids be made by telephone, telegraph, facsimile or other communication technology except through BizNet. <b>All</b> pages of the <b>Bid Proposal Form</b> <i>must</i> be uploaded to BizNet prior to the date and time of the Bid Opening.
<b>1.10.5</b>	A <b>Bid Proposal Form</b> that has omitted items, omitted pages, added items not called for, altered the form, contains conditional bids, contains alternative bids, or contains obscure bids.
<b>1.10.6</b>	A <b>paper Bid Package</b> sent to the DAS/CS Office of Legal Affairs, Policy, and Procurement. Such bids will be returned to the bidder unopened.
<b>1.10.7</b>	<b>Any Bidder</b> that does <i>not</i> make all required <b>pre-award submittals</b> <i>within</i> the designated time period. DAS/CS <i>may</i> reject such bids as <b>non-responsive</b> .
<b>1.11 Pre-Bid Meeting:</b>	
<b>1.11.1</b>	See <b>Section 00 11 16 Invitation to Bid</b> and <b>Section 00 25 13 Pre-Bid Meeting Agenda</b> for details.
<b>1.11.2</b>	When a <b>Pre-Bid Meeting</b> is “ <b>strongly encouraged</b> ”, all attendees shall sign his or her name to the official roster and list the name and address of the company he or she represents.
<b>1.11.3</b>	When a <b>Pre-Bid Meeting</b> is <b>MANDATORY</b> , all attendees will be required to register. <b>Proper registration</b> means that the attendee has signed his or her name to the official roster and listed the name and address of the company he or she represents on the official roster no later than the designated start time of the <b>MANDATORY Pre-Bid Meeting</b> . Bidders are advised to register early as <b>no</b> attendee will be allowed to register <i>after</i> the advertised start time of the <b>MANDATORY Pre-Bid Meeting</b> .  <b>All</b> bids submitted by all contractors who have <i>not</i> properly registered and attended the <b>MANDATORY Pre-Bid Meeting</b> shall be rejected as <b>non-responsive</b> .
<b>1.11.4</b>	<b>All Bidders Attending a Pre-Bid Meeting at a Connecticut Department of Corrections (DOC) Facility: Prior to the Pre-Bid Meeting</b> , download the “ <b>Security Background Questionnaire</b> ” from the <b>CT DOC website</b> ( <a href="http://www.ct.gov/doc">www.ct.gov/doc</a> under “ <b>Forms</b> ”), complete and submit the form as directed, and obtain approval, otherwise admission to the Pre-Bid Meeting <b>will be denied</b> . It is recommended that the approved form be brought as evidence of approval to attend the Pre-Bid Meeting.

<b>1.12 Pre-Bid Equals and Substitution Requests Procedures:</b>	
<b>1.12.1</b>	All submissions requesting "Equals and/or Substitutions" shall be made by the <b>Bidder</b> in accordance with <b>Section 01 25 00 Substitution Procedures</b> of the <b>Division 01 General Requirements and Article 15, Materials: Standards of Section 00 72 13 General Conditions</b> . Every submission shall contain all the information necessary for DAS/CS to evaluate the submission and the request. Failure to submit sufficient information to make a proper evaluation, including submittal of data for the first manufacturer listed as well as the data for the " <b>Equals and/or Substitutions</b> " proposed, shall result in a <b>rejection</b> of the submission and request. Upon receipt of the submission and request, DAS/CS shall notify the <b>Bidder</b> that the request has been received and as soon as possible shall render a decision on such submission and request.
<b>1.12.2</b>	<b>Pre-Bid-Opening Substitution of Materials and Equipment:</b> The Owner will consider requests for equals or substitutions <i>if received fourteen (14) Calendar Days prior</i> to the <b>Bid Opening Due Date</b> , as stated in the <b>Invitation To Bid</b> . The <b>Equal or Substitute Product Request (Form 7001)</b> must be used to submit requests. Download <b>Form 7001</b> from the DAS Homepage ( <a href="http://www.ct.gov/DAS">www.ct.gov/DAS</a> ) > Doing Business With The State > State Building Construction > Publications and Forms > DAS Construction Services Library > 7000 Series.
<b>1.12.3</b>	<b>Equals and/or Substitutions Requests Submittal:</b> Requests for Equals or Substitutions shall be submitted to the <b>DAS/CS Project Manager, Architect / Engineer, and Construction Administrator</b> .
<b>1.12.4</b>	<b>Substitution Request Deadline:</b> Any substitution request not complying with requirements will be denied. Substitution requests sent <b>after</b> the <b>Deadline</b> will be denied.
<b>1.12.5</b>	<b>Addendum:</b> An Addendum shall be issued to inform all prospective bidder of any accepted substitution in accordance with our addenda procedures.
<b>1.12.6</b>	<b>Time Extensions:</b> No extensions of time will be allowed for the time period required for consideration of any Substitution or Equal.
<b>1.12.7</b>	<b>Post Contract Award Substitution of Materials and Equipment:</b> All requests for "Equals and Substitutions" <b>after</b> the Award of the Contract shall be made <b>only</b> by the <b>Prime Contractor</b> for materials or systems specified that are no longer available. The requests will not be considered if the product was not purchased in a reasonable time after award, in accordance with <b>Article 15, Materials: Standards of Section 00 72 13 General Conditions</b> .
<b>1.13 Joint Ventures:</b>	
<b>1.13.1</b>	<b>Each entity</b> in a Joint Venture shall submit with the Venture's bid a <b>letter</b> on their respective company letterheads stating: <ul style="list-style-type: none"> <li>· Their <b>agreement to bid</b> as a Joint Venture with the other named Joint Venture, and set forth the <b>name and address</b> of the other Joint Venture(s).</li> <li>· The <b>respective percentage of the project work</b> that would be the responsibility of each of the Joint Ventures.</li> </ul>
<b>1.13.2</b>	<b>Prequalification: Each entity</b> in a Joint Venture shall submit its <b>Prequalification Certificate and Update (Bid Statement)</b> . <b>Each entity</b> in a Joint Venture shall be <b>prequalified</b> at the time of the bid and during the entire project construction. <b>Each entity</b> in a Joint Venture shall have the <b>prequalification single project limit</b> , and <b>remaining aggregate capacity balance</b> to meet the value of its respective percentage of the joint proposed bid.
<b>1.13.3</b>	<b>Each entity</b> in a Joint Venture shall submit <b>Section 00 45 14 General Contractor Bidder's Qualification Statement</b> .
<b>1.13.4</b>	<b>Bonding:</b> The Joint Venture shall obtain the required <b>bonding</b> from a surety for the <b>total amount</b> of the contract price.
<b>1.13.5</b>	<b>Insurance: Each entity</b> in a Joint Venture shall have the <b>required insurance coverages and limits</b> to meet the insurance requirements of the contract. The Joint Venture shall provide <b>Builder's Risk insurance</b> .
<b>1.13.6</b>	<b>Bid Submission and Contract Signing:</b> If a Joint Venture submits a bid proposal, it shall be considered to be a proposal by <b>each</b> of the Joint Ventures, jointly and severally, for the performance of the entire contract as a Joint Venture in accordance with the terms and conditions of the contract. <b>Each entity</b> in a Joint Venture is required to <b>sign the contract</b> acknowledging that each Joint Venture shall be jointly and severally liable for the performance of the entire contract.
<b>1.13.7</b>	<b>Certificate of Legal Existence: Each entity</b> in a Joint Venture shall obtain a <b>Certificate of Legal Existence</b> and submit it with the contract documents.
<b>1.14 Procedure for Alleged Violation(s) of Part II Chapter 60 of C.G.S. Bidding and Contracts:</b>	
<b>1.14.1</b>	The Regulations of Connecticut State Agencies establishes a procedure for promptly hearing and ruling on claims alleging a violation or violations of the contract bidding provisions of Part II of Chapter 60 of the Connecticut General Statutes (hereinafter "Chapter 60"). In view of the fact that time is normally of the essence in awarding construction contracts under Chapter 60, the grievance procedures are intended to be quick, informal and conclusive so as to avoid delays which can increase costs and jeopardize the very ability of the State to proceed with needed public works projects.
<b>1.14.2</b>	Download " <b>6510 Procedure for Alleged Violation(s)</b> " and " <b>6505 Petition for Alleged Violation(s)</b> " from the DAS Homepage ( <a href="http://www.ct.gov/DAS">www.ct.gov/DAS</a> ) > Doing Business With The State > State Building Construction > Publications and Forms > DAS Construction Services Library > 6000 Series > Scroll down to locate documents.

<b>1.15 Labor Market Area:</b>	
<b>1.15.1</b>	All Bidders <i>shall</i> have read <b>C.G.S. §§ 31-52 and 31-52a</b> , as revised. These sections relate to the <b>preference of State citizens</b> and the <b>preference of residents of the labor market area</b> in which the work under the contract is to be done and the <b>penalties for violations</b> thereof.
<b>1.15.2</b>	In order to avoid violations by the contractor and to cooperate with and assist the State in the implementation of the statutory mandates, any bidder awarded a contract with the State <b>shall</b> be required to provide the State with the following information: <ul style="list-style-type: none"> <li>.1 The names and addresses of employees utilized by the contractor and by its subcontractors and how long each such employee has resided in Connecticut.</li> <li>.2 How long each employee has resided in the labor market area, as established by the State Labor Commissioner, in which the work under the contract is to be done. Labor market areas are indicated on the end of this section.</li> <li>.3 Within thirty (30) days after the start of work, the contractor <b>shall</b> submit a signed statement setting forth the procedures the contractor and its subcontractors have taken to assure that they have sought out qualified residents of the labor market area. Also, the statement <b>shall</b> include information as to how many persons were considered for employment and how many were actually hired. Such procedures will include, but not be limited to, obtaining names of available persons from area Employment Security Offices.</li> <li>.4 In the same manner as <b>Subsection 1.15.2.3</b> above, the statement <b>shall</b> indicate the steps taken to assure that the contractor and its subcontractors have sought out qualified residents of this State.</li> </ul>
<b>1.15.3</b>	The contractor <b>shall</b> cooperate with and provide information to the DAS/CS Project Manager or their designee assigned to collect and verify the information required. The State may request that all such information be updated during the term of the contract at reasonable times.
<b>1.15.4</b>	All such information gathered and compiled by the State <b>shall</b> be forwarded to the Labor Commissioner.
<b>1.15.5</b>	<b>Pursuant to C.G.S. § 31-52b, as revised:</b> <p style="padding-left: 40px;">"The provisions of C.G.S. § 31-52 and 31-52a <b>shall not</b> apply where the State or any subdivision thereof may suffer the loss of revenue granted or to be granted from any agency or department of the federal government as a result of said sections or regulative procedures pursuant thereto."</p> <p>However, no exception shall be determined to be applicable unless stated in writing by the Commissioner of the Department of Administrative Services.</p>
<b>1.15.6</b>	<b>Website Link:</b> For guidance on the CT DOL Labor Market Areas (LMA) go to the CT DOL website <a href="http://www.ctdol.state.ct.us/">http://www.ctdol.state.ct.us/</a> , under "Program Services", click on "Labor Market information".
<b>1.16 Executive Orders:</b>	
<b>1.16.1</b>	All Executive Orders of which are incorporated into and are made a part of the Contract as if they had been fully set forth in it. The Contract is subject to the provisions of the following: <ul style="list-style-type: none"> <li>.1 <b>Executive Order No. 3:</b> Governor Thomas J. Meskill, promulgated 06/16/71, concerning labor employment practices;</li> <li>.2 <b>Executive Order No. 17:</b> Governor Thomas J. Meskill promulgated 02/15/73, concerning the listing of employment openings;</li> <li>.3 <b>Executive Order No. 16:</b> Governor John G. Rowland promulgated 08/04/99, concerning violence in the workplace;</li> <li>.4 <b>Executive Order No. 14:</b> Governor M. Jodi Rell, promulgated 04/17/06, concerning procurement of cleaning products and services; and</li> <li>.5 <b>Executive Order No. 49:</b> Governor Dannel P. Malloy, promulgated 05/22/15, concerning the requirement for certain state contractors to disclosure campaign contributions to candidates for statewide public office or The General Assembly and to ensure convenient public access to information related to gifts and campaign contribution disclosure affidavits by state contractors.</li> </ul>
<b>1.16.2</b>	All Executive Orders are available for download from the State of Connecticut website. Go to <a href="http://www.ct.gov">www.ct.gov</a> , click on "Governor Ned Lamont" and scroll down to "Executive Orders".
<b>1.17 Retaliation For Disclosure of Information:</b>	
<b>1.17.1</b>	Each contract between a state or quasi-public agency and a large state contractor shall provide that, if an officer, employee, or appointing authority of a large state contractor takes or threatens to take any personnel action against any employee of the contractor in <b>retaliation</b> for such employee's <b>disclosure</b> of information to the Auditors of Public Accounts or the Attorney General under the provisions of <b>C.G.S. § 4-61dd (a)</b> , the contractor shall be liable for a civil penalty of not more than five thousand dollars for each offense, up to a maximum of twenty per cent of the value of the contract. Each violation shall be a separate and distinct offense and in the case of a continuing violation each calendar day's continuance of the violation shall be deemed to be a separate and distinct offense. The executive head of the state or quasi-public agency may request the Attorney General to bring a civil action in the Superior Court for the judicial district of Hartford to seek imposition and recovery of such civil penalty.
<b>1.17.2</b>	Each large state contractor shall post a <b>notice</b> of the provisions of <b>C.G.S. § 4-61dd</b> relating to large state contractors in a conspicuous place that is readily available for viewing by the employees of the contractor.

**1.18 Laws of the State of Connecticut:**

Forum and Choice of Law. The Bidder agrees that in the event it is awarded a Contract, the Bidder and the State deem the Contract to have been made in the City of Hartford, State of Connecticut. Both parties agree that it is fair and reasonable for the validity and construction of the Contract to be, and it shall be, governed by the laws and court decisions of the State of Connecticut, without giving effect to its principles of conflicts of laws. To the extent that any immunities provided by Federal law or the laws of the State of Connecticut do not bar an action against the State, and to the extent that these courts are courts of competent jurisdiction, for the purpose of venue, the complaint shall be made returnable to the Judicial District of Hartford only or shall be brought in the United States District Court for the District of Connecticut only, and shall not be transferred to any other court, provided, however, that nothing here constitutes a waiver or compromise of the sovereign immunity of the State of Connecticut. The Bidder waives any objection which it may now have or will have to the laying of venue of any claims in any forum and further irrevocably submits to such jurisdiction in any suit, action or proceeding.

**1.19 State's Sovereign Immunity:**

Nothing in this Agreement shall be construed as a waiver or limitation upon the **State's sovereign immunity**. To the extent this Section is found to be inconsistent with any other part of this Agreement, this Section shall control. This Section of the Agreement shall survive the completion and/or termination of this Agreement.

**2.0 Bid Proposal Form Instructions:**

**2.1 Bid Proposal Form:**

**2.1.1 All Bidders** shall upload **ALL** pages of **Section 00 41 00 Bid Proposal Form** to BizNet, prior to the date and time of the Bid Opening.

**2.2 Threshold Projects:**

**2.2.1** See **page 1** of the **Bid Proposal Form** to determine if this Project exceeds the **Threshold Limits**.

**2.2.2** If this Project exceeds Threshold Limits, **all Bidders** shall list their Firm's **Major Contractor Registration License Number** in the **Bid Proposal Form**.

**2.2.3** The **Apparent Low Bidder** shall also provide the Subcontractor(s) **Major Contractor Registration License** number(s) to the DAS/CS Office of Legal Affairs, Policy, and Procurement within **ten (10) business days after** receipt of the Letter of Intent from DAS/CS.

**2.2.4 Summary of Registration Requirements for Major Contractors:** Any person engaged in the business of construction, structural repair, structural alteration, dismantling or demolition of a structure or addition that exceeds the threshold limits provided in **C.G.S §29-276b**, or any person who, under the direction of a general contractor, performs or offers to perform any work that impacts upon the structural integrity of a structure or addition, including repair, alteration, dismantling or demolition of a structure or addition that exceeds the threshold limits shall engage in or offer to perform the work of a Major Contractor unless such person has first obtained a license or certificate of registration from the Connecticut Department of Consumer Protection (DCP). Individuals must be licensed under the requirements of **C.G.S §20-341gg "Registration of Major Contractors"**. DCP shall issue a certificate of registration to any person who is prequalified pursuant to section 4a-100 who applies for registration in accordance with this section.

**2.2.5** The Bidder and all Subcontractors that engage in work that impacts upon the structural integrity of a structure or addition must register as a **Major Contractor** with DCP and obtain a **Major Contractor License** issued by DCP **PRIOR** to the date and time of the Bid Opening for this Project.

**2.2.6** For further information go to the DCP Website: [www.ct.gov/dcp](http://www.ct.gov/dcp).

**2.3 Proposed Lump Sum Base Bid, Allowances, and Contingent Work:**

**2.3.1** The proposed **Lump Sum Base Bid** shall be set forth in the space **provided on Section 00 41 00 Bid Proposal Form**.

**2.3.2** The **Proposed Lump Sum Base Bid** shall *include* all **Allowances**, all work indicated on the drawings and/or described in the specifications *except* for **Contingent Work**. See the **Bid Proposal Form, Section 01 20 00 Contract Considerations, and Section 01 23 13 Supplemental Bids** of Division 01 General Requirements for details regarding **Contingent Work**.

**2.3.3** "**Contingent Work**" includes **Unit Prices** (for Earth and Rock Excavation, Environmental Remediation, and/or Hazardous Building Materials Abatement) and **Supplemental Bids**. See **Section 01 20 00 Contract Considerations and Section 01 23 13 Supplemental Bids**, respectively, for applicability.

**2.3.4** The **Proposed Lump Sum Base Bid** shall be shown in *both numerical figures* and "**printed**" words **dollar amount**. In the event of any discrepancy the "**printed**" words **dollar amount** shall govern.

<b>2.4 Addenda and Interpretations:</b>	
2.4.1	The <b>Number of Addenda</b> issued by the State of Connecticut shall be set forth in the space provided on the <b>Bid Proposal Form</b> . It shall be the Bidder's responsibility to make inquiry as to, and to obtain, the Addenda issued, if any.
2.4.2	<b>Addenda</b> , if issued, will be posted on the State Contracting Portal.
2.4.3	<b>Failure to acknowledge</b> all <b>Addenda</b> in the space provided in the Bid Proposal Form <b>shall</b> be cause for <b>rejection</b> of the bid.
2.4.4	Attaching <b>Addenda</b> to the <b>Bid Proposal Form</b> does <b>not</b> constitute an acknowledgement of all Addenda and does not relieve the Bidder from the requirement for the Bidder to acknowledge all Addenda in the space provided on the Bid Proposal Form.
2.4.5	<b>No interpretations</b> of the meaning of the plans, specifications or other contract documents will be made <b>orally</b> at any time. Every <b>request</b> for such interpretation <b>shall</b> be in <b>writing</b> to the awarding authority and to be given consideration <b>shall</b> be received at least <b>fourteen (14)</b> Calendar Days <i>prior</i> to the date fixed for the opening of bids. Any and all such <b>interpretations</b> and any <b>supplemental instructions</b> will be in the form of written <b>Addenda</b> to the specifications which, if issued, will be posted on the State Contracting Portal.
2.4.6	Contractors who have subscribed through BizNet to receive daily e-mail alert notices when new Bids/RFPs are issued will be notified via a daily CT DAS " <b>Connecticut Procurement Portal Daily Notice</b> ".
<b>2.5 Bidder's Qualification Statement and Objective Criteria for Evaluating Bidders:</b>	
2.5.1	<b>All Bidders</b> shall download, complete, and upload <b>Section 00 45 14 General Contractor Bidder's Qualification Statement</b> to BizNet prior to the date and time of the Bid Opening. See BizNet for a template. This information shall be considered as part of the <b>Bid Proposal Form</b> . Failure of a Bidder to answer any question or provide required information <b>may</b> be grounds for the awarding authority to <b>disqualify</b> and <b>reject</b> the bid.
2.5.2	<b>All Bidders</b> shall comply with <b>Section 00 45 15 Objective Criteria Established for Evaluating Qualifications of Bidders</b> . The <b>Objective Criteria Established for Evaluating Qualifications of Bidders</b> are to assure that the State of Connecticut will secure the "lowest responsible and qualified bidder" who has the ability and capacity to successfully complete the Bid Proposal Form and the Work. Failure to comply with any portion of this requirement <b>may</b> cause <b>rejection</b> of the bid. <b>Note:</b> Individual Specification Sections <b>may</b> contain General Contractor and/or Subcontractor Qualification requirements that <i>exceed</i> those in <b>Section 00 45 15 Objective Criteria Established for Evaluating Qualifications of Bidders</b> .
<b>2.6 Bidder's Prequalification Requirements for Projects exceeding \$500,000:</b>	
2.6.1	<b>All Bidders</b> for Projects with estimated Construction Costs <b>greater</b> than <b>\$500,000</b> shall upload a current copy of their " <b>DAS Prequalification Certificate</b> " and " <b>DAS Update (Bid) Statement</b> " for the applicable <b>Class of Work</b> on <b>page 1</b> of <b>Section 00 11 16 Invitation to Bid</b> to Biznet <i>prior</i> to the date and time of the Bid Opening.
2.6.2	Pursuant to <b>C.G.S. § 4b-91(a)(2)</b> and <b>C.G.S. §4a-100</b> , as revised, every contract for the construction, reconstruction, alteration, remodeling, repair or demolition of any public building or any other public work by the state that is <b>estimated</b> to exceed <b>five hundred thousand dollars (\$500,000)</b> shall be awarded <b>only</b> to the lowest responsible and qualified Bidder who is " <b>prequalified</b> " by DAS in the <b>Class of Work for this Project</b> , as specified in <b>Section 00 11 16 Invitation to Bid</b> . No person who's <b>Contract or Subcontract</b> exceeds <b>\$500,000</b> in value may perform work as a Contractor or Subcontractor, unless the person is <b>prequalified</b> , <i>at the time of bid submission</i> , in accordance with <b>C.G.S. § 4a-100</b> , as amended, <b>C.G.S. § 4b-91(a)(2)</b> , and <b>C.G.S. §4b-91 (j)</b> . "Prequalified" includes the contractor's or substantial subcontractor's prequalification classifications, aggregate work capacity ratings and single project limits.
2.6.3	The State may waive minor irregularities that otherwise may cause rejection of a Bid only when waiving such minor irregularities is in the best interests of the State and the minor irregularities have been corrected by the Bidder within seven (7) Calendar Days after the Bid Due Date. Failure to properly <u>complete</u> , <u>sign</u> and <u>upload</u> either the " <b>DAS Prequalification Certificate</b> " or " <b>DAS Update (Bid) Statement</b> " to Biznet prior to the date and time of the Bid Opening <b>shall</b> cause <b>rejection</b> of the bid and shall <b>not</b> be considered a minor irregularity under <b>C.G.S. § 4b-95</b> .
2.6.4	See <b>Section 00 40 15 CT DAS Prequalification Forms</b> for instructions on preparing and/or downloading your Firm's " <b>DAS Contractor Prequalification Certificate</b> " and " <b>DAS Update (Bid) Statement</b> ".
2.6.5	<b>Bidder's Certification:</b> Within <b>ten (10) business days after</b> receipt of the Letter of Intent from DAS/CS, the <b>Apparent Low Bidder shall</b> submit a <b>Bidder's Certification</b> certifying that the information in the bid is true, that there has been no substantial change in the Bidder's financial position or corporate structure since its most recent <b>DAS Prequalification Certificate</b> and <b>DAS Update (Bid) Statement</b> and that the bid was made without fraud or collusion with any person. See <b>Section 00 92 10 Additional Forms</b> of this Project Manual for a sample form.



<b>2.7 Named Subcontractor Requirements:</b>	
2.7.1	All Bid Proposals <b>shall</b> be for the complete work as specified and <b>shall</b> include the names of any Subcontractors for the <b>four (4) Classes of Work</b> specified in <b>C.G.S. § 4b-93(a)</b> , as revised, and for each other class of work for which the awarding authority has required a separate section pursuant to said subsection, together with the dollar amounts of their subcontracts. The contractor shall be selected on the basis of such bids.
2.7.2	The <b>Named Subcontractor Bid Price</b> shall be the price set forth in the space provided on the <b>Bid Proposal Form</b> .
2.7.3	No bid shall be rejected because of an error in setting forth the Name of a Subcontractor as long as the Subcontractor or Subcontractors designated are clearly identifiable.
2.7.4	No bid shall be rejected because the <b>Named Subcontractor's</b> plans and specifications do not accompany the bid or are not submitted with the bid.
2.7.5	Failure to correctly state a <b>Named Subcontractor's price</b> on the Bid Proposal Form <b>shall</b> be cause for <b>rejection</b> of the Bid.
2.7.6	<b>Named Subcontractor Replacement:</b> The awarding authority may require the <b>Bidder</b> to replace a <b>Named Subcontractor</b> whenever the awarding authority determines in their sole discretion that such <b>replacement</b> is in the <b>best interest of the State</b> .
2.7.7	<b>Named Subcontractor Substitution:</b>
.1	The awarding authority <b>shall not</b> permit <b>substitution</b> of a subcontractor for one <b>Named</b> in accordance with the provisions of <b>C.G.S. § 4b-95</b> , as revised, <b>except</b> for " <b>Good Cause</b> ".
.2	The awarding authority <b>shall not</b> permit <b>substitution</b> of a subcontractor for any designated sub-trade work bid to be performed by the Bidder's own forces in accordance with the provisions of <b>C.G.S. § 4b-95</b> <b>except</b> for " <b>Good Cause</b> ".
.3	<b>"Good Cause":</b> The term "good cause" includes but is not limited to, a subcontractor's or, <b>where appropriate, a Bidder's:</b> (1) death or physical disability, if the listed subcontractor is an individual; (2) dissolution, if a corporation or partnership; (3) bankruptcy; (4) inability to furnish any performance and payment bond shown on the bid form; (5) inability to obtain, or loss of, a license necessary for the performance of the particular category of work; (6) failure or inability to comply with a requirement of law applicable to contractors, subcontractors, or construction, alteration, or repair projects; and (7) failure to perform its agreement to execute a subcontract under C.G.S. § 4b-96, as revised.
2.7.8	<b>Named Subcontractor DAS Prequalification Requirement for Subcontracts exceeding \$500,000:</b>
.1	The <b>Three (3) Apparent Lowest Bidders</b> shall receive <i>VIA EMAIL</i> a "Set-Aside Contractor Schedule Request" ("Request") from the DAS/CS Office of Legal Affairs, Policy, and Procurement. For <b>Subcontracts greater than \$500,000</b> , the <b>Three (3) Apparent Lowest Bidders</b> shall submit within <b>ten (10) Calendar Days</b> after receipt of the Request current <b>DAS Prequalification Certificate(s) and Update (Bid) Statement(s)</b> for <b>each Named Subcontractor</b> in <b>Table 2.7</b> of the <b>Bid Proposal Form</b> , to the extent the <b>Class of Work for the Named Subcontractor is a Prequalification Classification</b> . This information shall be considered as part of the <b>Bid Proposal Form</b> and failure to comply with any portion of this requirement <b>may cause rejection</b> of the bid.
.2	Instructions for downloading " <b>DAS Contractor Prequalification Certificates</b> " and " <b>DAS Update (Bid) Statement</b> " can be found in <b>Section 00 40 15 CT DAS Prequalification Forms</b> .
.3	<b>In accordance C.G.S. §4b-91 (j)</b> , no person whose subcontract <i>exceeds</i> five hundred thousand dollars in value may perform work as a subcontractor on a project, which project is estimated to cost more than five hundred thousand dollars and is paid for, in whole or in part, with state funds, <i>unless, at the time of bid submission</i> , the person is prequalified in accordance with <b>C.G.S. §4a-100</b> , as amended. "Prequalified" includes the contractor's or substantial subcontractor's prequalification classifications, aggregate work capacity ratings and single project limits. For <b>Subcontracts</b> estimated to <b>exceed \$500,000</b> , the <b>Named Subcontractor must</b> be " <b>prequalified</b> " by DAS in the <b>Class of Work</b> specified in <b>Table 2.7</b> of <b>Section 00 41 00 Bid Proposal Form</b> <i>at the time of bid submission</i> , pursuant to <b>C.G.S. §4b-91(j)</b> and <b>C.G.S. § 4a-100</b> , as amended. This requirement also applies to the Bidder, if the Bidder is a Named Subcontractor.
2.7.9	<b>Named Subcontractor Bidder's Qualification Statements (Section 00 45 17)</b>
.1	The <b>Three (3) Apparent Lowest Bidders</b> shall receive <i>VIA EMAIL</i> a "Set-Aside Contractor Schedule Request" ("Request") from the DAS/CS Office of Legal Affairs, Policy, and Procurement. For Projects with <b>estimated Construction Costs greater than \$500,000</b> , the <b>Three (3) Apparent Lowest Bidders</b> shall submit within <b>ten (10) Calendar Days</b> after receipt of the Request completed <b>Section 00 45 17 Named Subcontractor Bidder's Qualification Statement(s)</b> of this Project Manual for <b>each Named Subcontractor</b> in <b>Table 2.7</b> of the <b>Bid Proposal Form</b> . This information shall be considered as part of the <b>Bid Proposal Form</b> and failure to comply with any portion of this requirement <b>may cause rejection</b> of the bid.
.2	<b>Important Note:</b> Individual Technical Specification Sections <b>may</b> contain qualification requirements that <b>exceed</b> those from <b>Section 00 45 17 Named Subcontractor Bidder's Qualification Statement</b> .

<b>2.7 Named Subcontractor Requirements (continued):</b>	
<b>2.7.10 Bidder Performing Work as Named Subcontractor:</b>	
.1	In accordance with <b>C.G.S. § 4b-95(c)</b> , it shall be presumed that the <b>Bidder</b> intends to perform, with its own employees, all work in such <b>four (4) Classes of Work</b> and such other classes, for which <b>no</b> Subcontractor is named in <b>Table 2.7 of the Bid Proposal Form</b> . In accordance with <b>C.G.S. § 4b-92</b> , as revised, the <b>Bidder's</b> qualifications for performing such work shall be subject to review.
.2	If the Bidder has listed itself as a <b>Named Subcontractor(s)</b> for a <b>Class(es) of Work</b> in <b>Table 2.7</b> of the <b>Bid Proposal Form</b> and the proposed dollar value of the Subcontract(s) is greater than \$500,000, then <b>to the extent the Class(es) of Work is a Prequalification Classification</b> , the Bidder shall provide a current <b>DAS Prequalification Certificate</b> and <b>Update (Bid) Statement</b> for <b>each</b> of the applicable <b>Class(es) of Work</b> within ten (10) Calendar Days after receipt of the "Set-Aside Contractor Schedule Request" from DAS/CS.
<b>2.8 Set-Aside Requirements:</b>	
<b>2.8.1 Bidder's DAS Set-Aside Certificate For Projects With Construction Costs Estimated To Be Less Than \$500,000: All Small Business Enterprise (SBE) / Minority Business Enterprise (MBE) Bidders</b>	shall upload a copy of their Firm's current "DAS Set-Aside Certificate" to BizNet prior to the date and time of the Bid Opening.
<b>2.8.2 Bidder Contract Compliance Monitoring Report For Projects With Construction Costs Estimated To Be Less Than \$500,000:</b>	All Firm's shall upload a completed copy of the CHRO Employment Information Form, " <b>Bidder Contract Compliance Monitoring Report</b> " <i>with</i> their <b>Bid Proposal Form</b> prior to the date and time of the Bid Opening. The report is posted on the <b>CHRO Webpage</b> : <a href="http://www.ct.gov/chro/cwp/view.asp?a=2525&amp;Q=315900&amp;chroPNavCtr= #45679">http://www.ct.gov/chro/cwp/view.asp?a=2525&amp;Q=315900&amp;chroPNavCtr= #45679</a> .
<b>2.8.3 All Bidders shall be required</b>	to award not less than the percentage(s) stated on <b>page 1 of Section 00 41 00 Bid Proposal Form</b> to Subcontractors who are currently certified and eligible to participate under the State of Connecticut Set-Aside Program for <b>SBE and/or MBE</b> contractors, in accordance with C.G.S. § 4a-60g. <b>Failure</b> to meet these requirements <b>shall</b> cause <b>rejection</b> of the bid. The MBE participation <b>does</b> count as part of the SBE participation.
<b>2.8.4 Set-Aside Contractor Schedule Request:</b>	The SBE/MBE participation requirement <i>must be met</i> even if the Bidder is <i>certified</i> and <i>eligible</i> to participate in the <b>Small Business Set-Aside Program</b> . To facilitate compliance with this requirement for set-aside subcontractors, the <b>Three (3) Apparent Lowest Bidders</b> shall receive <b>VIA EMAIL</b> a "Set-Aside Contractor Schedule Request" ("Request") from the DAS/CS Office of Legal Affairs, Policy, and Procurement. As directed in the Request, the <b>Three (3) Apparent Lowest Bidders</b> shall submit within <b>ten (10) Calendar Days</b> after receipt of the Request, a <b>list of certified set-aside contractors</b> to be used on this project along with the <b>dollar amounts</b> to be paid to each. (See Section 00 73 27 Set-Aside Contractor Schedule for a sample Request.) A copy of the <b>current DAS Set-Aside Certificate</b> for <b>each Subcontracted SBE and/or MBE firm(s)</b> listed in the " <b>Set-Aside Contractor Schedule</b> " must be attached to the Request. This information will be considered as part of your Bid Proposal Form and <b>failure</b> to comply with any portion of this requirement within the ten (10) days, including but not limited to <b>failure</b> to list or meet the necessary dollar amount or percentage of the bid price, will be cause to <b>reject</b> your bid.
<b>2.8.5 Percentage of Work Performed by SBE/MBE Contractors and Subcontractors:</b>	The percentage of the work performed by the SBE/MBE Contractors and Subcontractors on this project shall not be less than the percentage noted in <b>Subsection 5.1 Amount of Work Required to Be Done by "Set-Aside" Contractors of Section 00 73 38 Commission on Human Rights (CHRO) Contract Compliance Regulations</b> .
<b>2.8.6 To view and/or download a Set-Aside Certificate:</b>	Go to the DAS Homepage ( <a href="http://www.ct.gov/DAS">www.ct.gov/DAS</a> ) > Small and Minority Businesses > Apply for Small Business Enterprise or Minority Business Enterprise Certification (SBE or MBE) > View/Search SBE/MBE Directory.
<b>2.9 Insurance Coverages:</b>	
<b>2.9.1</b>	The Insurance coverages required for this project shall be those listed in <b>Article 35 Contractors Insurance of Section 00 73 13 General Conditions</b> of this Project Manual. See <b>Section 00 41 00 Bid Proposal Form</b> and <b>Section 00 62 16 Certificate of Insurance</b> of this Project Manual for additional details.
<b>2.9.2</b>	The <b>Apparent Low Bidder shall</b> submit the Firm's <b>Certificate of Liability Insurance Acord® form</b> within <b>ten (10) business days after</b> receipt of the Letter of Intent from DAS/CS.

**3.0 All Other Required Bid Documents, Affidavits, and Certifications:**

**3.1 Affidavits and Certifications:**

**Important Note:** *The State may waive minor irregularities that otherwise may cause rejection of a Bid only when waiving such minor irregularities is in the best interests of the State and the minor irregularities have been corrected by the Bidder within seven (7) Calendar Days after the Bid Due Date. Failure to properly complete, sign and upload **all** of the following Affidavits and Certifications to Biznet prior to the date and time of the Bid Opening **shall** cause **rejection** of the bid and shall **not** be considered a minor irregularity under C.G.S. § 4b-95.*

**3.1.1 Gift and Campaign Contribution Certification – OPM Ethics Form 1: All Bidders**

- .1 All Bidders:** In accordance with Executive Order No. 49, and pursuant to C.G.S. §§ 4-250, 4-252(c) and 9-612(f)(2), as revised, any principal or key personnel of the person, firm or corporation submitting a bid or proposal for a contract that has a value of **\$50,000** or more, shall be required to upload to BizNet a **Gift and Campaign Contribution Certification** prior to the date and time of the Bid Opening.
- .2** Any bidder or proposer that **does not** upload the **Gift and Campaign Contribution Certification** to BizNet prior to the date and time of the Bid Opening as required under this section shall be **disqualified** and DAS shall award the contract to the next highest ranked proposer or the next lowest responsible qualified bidder or seek new bids or proposals. Failure to upload this form to BizNet **prior** to the date and time of the Bid Opening shall not be considered a minor irregularity under CGS 4b-95.
- .3** Once uploaded, an updated **Gift and Campaign Contribution Certification** shall be uploaded within **30 days** of any changes to the submitted information.
- .4** **Annually**, on or within **two (2)** weeks of the **anniversary** date of the execution of this contract, the Contractor shall upload a completed **Annual Certification** with authorizing resolution. For the purposes of this paragraph, the execution date of the contract will be the date the DAS Commissioner signs the contract.

**3.1.2 Consulting Agreement Affidavit – OPM Ethics Form 5: All Bidders**

- .1 All Bidders:** Pursuant to C.G.S. §§ 4a -81a and 4a -81b, as revised, a **Consulting Agreement Affidavit** must be completed and uploaded to BizNet prior to the date and time of the Bid Opening for contracts with a value of **\$50,000** or more.
- .2** In the event that a Bidder or vendor fails or refuses to upload the **Consulting Agreement Affidavit** to BizNet prior to the date and time of the Bid Opening, as required under C.G.S. § 4a-81, such bidder shall be **disqualified** and the award shall be made to the next lowest responsible qualified bidder or new bids or proposals shall be sought. Failure to upload this form to BizNet **prior** to the date and time of the Bid Opening shall not be considered a minor irregularity under CGS 4b-95.
- .3** Once uploaded, an updated **Consulting Agreement Affidavit** **shall** be amended and uploaded not later than (1) **thirty (30) days** after the effective date of any such change or (2) upon the submittal of any new bid or proposal, whichever is earlier. For the purposes of this paragraph, the **execution date** of the contract will be the date the DAS Commissioner signs the contract.
- .4** Other Contributions by Individuals. Principals of Investment Services Firms, State Contractors, Principals Of State Contractors, Prospective State Contractors Or Principals Of Prospective State Contractors. Lists. Subcontracts Study. State Officials or Employees: All acquisitions, agreements and contracts are subject to the provisions of the C.G.S. § 9-612 regarding **Campaign Contribution or Contributions**.

**3.1 Affidavits and Certifications Forms (continued):**

**3.1.3 Ethics Affidavit – OPM Ethics Form 6: All Bidders and Apparent Low Bidder**

- .1 **All Bidders:** Pursuant to C.G.S. §§ 1-101mm and 1-101qq, as revised, when DAS/CS is seeking a contract for a large state construction or procurement contract having a cost of more than **\$500,000**, DAS shall inform all potential consultant and contractor firms of the summary of state ethics laws developed by the Office of State Ethics (OSE) pursuant to C.G.S. § 1-81b. “Large State Contract” means an agreement or a combination or series of agreements between a state agency and a person, firm or corporation, having a total value of more than **\$500,000** in a calendar or fiscal year a project for the construction, alteration or repair of any public building or public work. For a **Guide to the Code of Ethics For Current or Potential State Contractors** go to the Office of State Ethics (OSE) website ([www.ct.gov/ethics](http://www.ct.gov/ethics)), then click on the “**Publications**” link.
- .2 **All Bidders:** Pursuant to C.G.S. § 1-101qq, as revised, DAS is also required to notify all potential consultant and contractor firms or a large state construction or procurement contract that they must upload an **Affirmation of Receipt of State Ethics Laws Summary** to BizNet prior to the date and time of the Bid Opening affirming that their key employees have read and understand the summary and agree to comply with the provisions of state ethics law.
- .3 Failure to upload this affidavit to BizNet prior to the date and time of the Bid Opening **shall** result in **rejection** of the bid and shall not be considered a minor irregularity under CGS 4b-95.
- .4 **Apparent Low Bidder:** Furthermore, the **Apparent Low Bidder** shall provide the **Summary of the State Ethics Laws** to each **Named Subcontractor** and any other **Subcontractor** or **Subconsultant** with a contract valued over **\$500,000** and obtain a **Subcontractor and Subconsultant State Ethics Affidavit** stating that the key personnel of the subcontractor have read, understand, and agree to comply with provisions of the state ethics laws. The **Apparent Low Bidder** shall submit such subcontractor(s) affidavits to the DAS/CS Office of Legal Affairs, Policy, and Procurement within **ten (10) business days** after receipt of the Letter of Intent from DAS/CS.

**3.1.4 Iran Certification – OPM Ethics Form 7: All Bidders**

- .1 **All Bidders:** Pursuant to C.G.S. § 4-252a, when DAS/CS is seeking a contract for a large state construction or procurement contract having a cost of more than **\$500,000**, an **Iran Certification** must be completed and uploaded to BizNet **prior to the date and time of the Bid Opening**.
- .2 Pursuant to C.G.S. § 4-252a, *“This form must always be submitted with the bid or proposal, or if there was no bid process, with the resulting contract, regardless of where the principal place of business is located. Entities whose principal place of business is located outside of the United States are required to complete the entire form, including the certification portion of the form. United States subsidiaries of foreign corporations are exempt from having to complete the certification portion of the form. Those entities whose principal place of business is located inside of the United States must also fill out the form, but do not have to complete the certification portion of the form.”*

**3.1.5 Nondiscrimination Certification – Form A, B, C, D, or E: All Bidders**

- .1 **All Bidders:** Pursuant to C.G.S. §§ 4a-60 and 4a-60a, as amended, a contractor must provide an awarding State agency with written representation or documentation that certifies the contractor complies with the State's nondiscrimination agreements and warranties prior to the award of any contract with the State. A **Nondiscrimination Certification** is required for all State contracts, regardless of type, term, cost or value. The **appropriate form** must be uploaded to BizNet prior to the date and time of the Bid Opening.
- .2 Once uploaded, an updated **Nondiscrimination Certification** shall be uploaded within **30 days** of any changes to the submitted information.
- .3 **Annually**, on or within **two (2) weeks** of the **anniversary** date of the execution of this contract, the Contractor shall upload a completed **Annual Certification** with authorizing resolution. For the purposes of this paragraph, the execution date of the contract will be the date the DAS Commissioner signs the contract.

**3.1.6** For instructions on how to electronically download and upload **Affidavits and Non-Discrimination Forms**, go to the DAS Homepage ([www.ct.gov/DAS](http://www.ct.gov/DAS)) > Doing Business with the State > Create a BizNet Account for Doing Business with the State > Documents/Forms > Vendor Guide to Uploading Affidavits and Nondiscrimination Forms Online.

<b>3.2 Security For Faithful Performance:</b>	
<b>3.2.1 Certified Check or Bid Bond: All Bidders</b>	
.1	<b>All Bidders for bids in excess of \$50,000 shall submit either a Certified Check or a Bid Bond</b> , in the form required by the awarding authority. See <b>Section 00 43 16 Standard Bid Bond</b> in BizNet for a template and important instructions regarding submitting the Bid Bond or Certified Check. Complete and upload <b>Section 00 43 16 Standard Bid Bond</b> to Biznet <b>prior</b> to the date and time of the Bid Opening for <b>either</b> the Bid Bond option <b>or</b> the Certified Check option.
.2	<b>Certified Check Option:</b> The <b>Certified Check</b> shall be drawn to the order of <b>"Treasurer, State of Connecticut"</b> , in which it is understood shall be cashed and the proceeds thereof used so far as may be necessary to reimburse the State of Connecticut for losses and damages arising by virtue of the Bidder's failure to file the required Bonds and execute the required contract if this proposal is accepted by the Awarding Authority.
.3	<b>Bid Bond Option:</b> The <b>Bid Bond</b> shall be in the form required by the awarding authority, having as <b>surety</b> thereto such surety company or companies acceptable to the DAS Commissioner and as are authorized to do business in this State, for an amount not less than 10 percent of the bid.
.4	<b>Return of Certified Check:</b> All <b>checks</b> submitted by <b>unsuccessful</b> Bidders shall be returned to them <b>after</b> the contract has been awarded.
.5	Failure to submit the Bid Bond <b>or</b> Certified Check <b>prior</b> to the date and time of the Bid Opening <b>shall</b> cause <b>rejection</b> of the bid and shall not be considered a minor irregularity under CGS 4b-95.
.6	<b>Forfeiture of Certified Check or Bid Bond:</b> <b>Failure</b> of the successful bidder to execute a contract awarded as specified and bid shall result in the <b>forfeiture</b> of the certified check or bid bond.
<b>3.2.2 Performance Bond: Apparent Low Bidder:</b>	Within <b>ten (10) business days after</b> receipt of the Letter of Intent from DAS/CS, the <b>Apparent Low Bidder shall</b> substitute for the <b>certified check or bid bond</b> accompanying its bid an executed <b>performance bond</b> , in the amount not less than 100 percent of the contract price, conditioned upon the faithful performance of the contract, and having as surety thereto such surety company or companies satisfactory to the Commissioner and as are authorized to transact business in this State. This bond is to be furnished pursuant to <b>C.G.S. § 49-41</b> , as revised. See <b>Section 00 92 10 Additional Forms</b> of this Project Manual for a template.
<b>3.2.3 Labor and Material Bond: Apparent Low Bidder:</b>	Within <b>ten (10) business days after</b> receipt of the Letter of Intent from DAS/CS, the <b>Apparent Low Bidder shall</b> submit a labor and material bond in the amount not less than 100 percent of the contract price which <b>shall</b> be binding upon the award of the contract to such bidder, with surety or sureties satisfactory to the Commissioner and as are authorized to transact business in this State, for the protection of persons supplying labor or materials in the prosecution of the work provided for in the contract for the use of each such person. Any such bond furnished <b>shall</b> have as principal the name of the successful Bidder. This bond is to be furnished pursuant to <b>C.G.S. § 49-41</b> , as revised. See <b>Section 00 92 10 Additional Forms</b> of this Project Manual for a template.
<b>3.2.4</b>	<b>The following section of the General Statutes of Connecticut, as revised, is inserted as information concerning this bond and will be incorporated into the Contract for the Work:</b> <b>C.G.S. § 49-41a. Enforcement of payment by general contractor to subcontractor and by subcontractor to his subcontractors. (a)</b> When any public work is awarded by a contract for which a payment bond is required by section 49-41, the contract for the public work shall contain the following provisions: (1) A requirement that the general contractor, within thirty days after payment to the contractor by the State or a municipality, pay any amounts due any subcontractor, whether for labor performed or materials furnished, when the labor or materials have been included in a requisition submitted by the contractor and paid by the State or a municipality; (2) a requirement that the general contractor shall include in each of its <b>subcontracts</b> a <b>provision</b> requiring each <b>subcontractor</b> to pay any amounts due any of its subcontractors, whether for labor performed or materials furnished, within thirty days after such subcontractor receives a payment from the general contractor which encompasses labor or materials furnished by such subcontractor. <b>(b)</b> If payment is not made by the general contractor or any of its subcontractors in accordance with such requirements, the subcontractor shall set forth his claim against the general contractor and the subcontractor of a subcontractor shall set forth its claim against the subcontractor through notice by registered or certified mail. Ten days after the receipt of that notice, the general contractor shall be liable to its subcontractor, and the subcontractor shall be liable to its subcontractor, for interest on the amount due and owing at the rate of one percent per month. In addition, the general contractor, upon written demand of its subcontractor, or the subcontractor, upon written demand of its subcontractor, shall be required to place funds in the amount of the claim, plus interest of one per cent, in an interest-bearing escrow account in a bank in this State, provided the general contractor or subcontractor may refuse to place the funds in escrow on the grounds that the subcontractor has not substantially performed the work according to the terms of his or its employment. In the event that such general contractor or subcontractor refuses to place such funds in escrow, and the party making a claim against it under this section is found to have substantially performed its work in accordance with the terms of its employment in any arbitration or litigation to determine the validity of such claim, then such general contractor or subcontractor shall pay the attorney's fees of such party. <b>(c)</b> No payment may be withheld from a subcontractor for work performed because of a dispute between the general contractor and another contractor or subcontractor. <b>(d)</b> This section shall not be construed to prohibit progress payments prior to final payment of the contract and is applicable to all subcontractors for material or labor whether they have contracted directly with the general contractor or with some other subcontractor on the work.
<b>3.2.5</b>	<b>Surety Sheet: Apparent Low Bidder:</b> Within <b>ten (10) business days after</b> receipt of the Letter of Intent from DAS/CS, the <b>Apparent Low Bidder shall</b> submit a Surety Sheet that provides information regarding the Surety Company and Agent. See <b>Section 00 92 10 Additional Forms</b> of this Project Manual for a template.

<b>3.3 Certificate (of Authority):</b>	
3.3.1	All Bidders for bids in excess of \$50,000 shall upload a signed and scanned <b>Section 00 40 14 Certificate (of Authority)</b> to BizNet prior to the date and time of the Bid Opening. See BizNet for a template.
3.3.2	The <b>Apparent Low Bidder</b> shall submit a <b>second Certificate (of Authority)</b> within <b>ten (10) business days after</b> receipt of the Letter of Intent from DAS/CS.
<b>3.4 Security Requirements for CT Department of Correction (CT DOC) Facilities:</b>	
3.4.1	All Bidders for Projects at a CT DOC Facility shall read and comply with <b>Section 00 73 63 CT DOC Security Requirements</b> for Contract Forces on CT DOC Facilities.
3.4.2	<b>NEW:</b> All Bidders for Projects at a CT DOC Facility: Prior to the Pre-Bid Meeting, all Bidders shall download the "Security Background Questionnaire" from the CT DOC website ( <a href="http://www.ct.gov/doc">www.ct.gov/doc</a> ), under "Forms", complete and submit the form as directed, and obtain approval, otherwise admission to the Pre-Bid Meeting <b>will be denied</b> . It is recommended that the approved form be brought as evidence of approval to attend the Pre-Bid Meeting.
<b>3.5 Affirmative Action Plan &amp; Employment Information Form (DAS-45): Apparent Low Bidder</b>	
3.5.1	For Projects greater than \$500,000 and/or Firms with 50 or more employees, the <b>Apparent Low Bidder shall</b> submit the Firm's <b>Affirmative Action Plan</b> and <b>Employment Information Form (DAS-45)</b> to CHRO within <b>fifteen (15) calendar days after</b> receipt of the "Request for the <i>Affirmative Action Plan</i> and <i>Employment Information Form</i> Letter" from DAS/CS. See <b>Section 00 73 38 Commission on Human Rights and Opportunities/ Contract Compliance Regulations</b> .
3.5.2	The Apparent Low Bidder <b>shall</b> submit a copy of the Transmittal Letter to the DAS/CS Office of Legal Affairs, Policy, and Procurement within <b>fifteen (15) calendar days after</b> receipt of the "Request for the <i>Affirmative Action Plan</i> and <i>Employment Information Form</i> Letter" from DAS/CS.
<b>3.6 Prevailing Wage: Apparent Low Bidder</b>	
3.6.1	The <b>Apparent Low Bidder shall</b> submit the " <b>Contractor's Wage Certification Form</b> " to CT Department of Labor (CT DOL) within <b>fifteen (15) calendar days after</b> receipt of the "Request for the <i>Affirmative Action Plan</i> and <i>Employment Information Form</i> Letter" from DAS/CS. See <b>Section 00 73 44 Prevailing Wage Rates/Contractor's Wage Certification/Payroll Certification</b> of this Project Manual.
3.6.2	Each contractor who is awarded a contract on or after October 1, 2002 shall be subject to provisions of <b>C.G.S. § 31-53, as revised</b> . See <b>Section 00 73 44 Prevailing Wage Rates/Contractor's Wage Certification/Payroll Certification</b> of this Project Manual.
3.6.3	<b>Annual Adjustment Of Prevailing Wage Rates:</b> In determining bid price, consideration should be given to <b>C.G.S. § 31-53 and 31-55a, as revised</b> , regarding <b>annual adjustment of prevailing wage rates</b> . Annual adjustments of prevailing wage rates will <b>not</b> be considered a matter for a contract amendment.
<b>3.7 NEW PROCESS: General Permit for the Discharge of Stormwater &amp; Dewatering Wastewaters from Construction Activities: Apparent Low Bidder</b>	
3.7.1	All DAS/CS construction projects disturbing <b>one or more total acres of land area</b> on a site <b>regardless of project phasing</b> must file a Department of Energy and Environmental Protection (DEEP) <a href="#">General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (DEEP-WPED-GP-015)</a> ("Construction Stormwater General Permit") registration and Stormwater Pollution Control Plan (SPCP) with the DEEP. <b>The DAS/CS Architect/Engineer (A/E) shall be responsible for registering the Construction Stormwater General Permit and SPCP through the online DEEP ezFile Portal prior to bidding.</b>
3.7.2	Once the Apparent Low Bidder is under contract with DAS/CS, and prior to the commencement of any construction activities, the Apparent Low Bidder ("Contractor") shall be required to provide the necessary information from all applicable contractors and/or subcontractors working on the Project to the DAS/CS A/E in order to finalize the SPCP and transfer the Construction Stormwater General Permit obligations to the Contractor.
3.7.3	All Contractors and Subcontractors listed on the SPCP shall be required to sign the SPCP "Contractor Certification Statement" and License Transfer Form <b>prior</b> to commencement of any construction activity.

**3.8 Section 00 52 73 Subcontract Agreement Forms: Apparent Low Bidder**

**3.8.1** The **Apparent Low Bidder** shall submit a completed **Section 00 52 73 Subcontract Agreement Form** of this Project Manual for *each* Named Subcontractor within **ten (10) Business Days** after receipt of the "Letter of Intent" from DAS/CS. This information *shall* be considered as part of the **Bid Proposal Form** and failure to comply with any portion of this requirement *may* cause **rejection** of the bid.

**3.8.2** Each **Named Subcontractor** shall be the matter of a **Subcontract** as required by **C.G.S. § 4b-96**.

**3.9 Non-Resident Contractors and Taxation: Apparent Low Bidder**

**3.9.1** **Nonresident contractors** must comply with the **provisions C.G.S. § 12-430 (7), Procedures for Nonresident Contractors**, and the regulations established pursuant to that section. See **Section 00 92 30 Procedures Regarding Taxation for Nonresident General/Prime Contractor and Subcontractors** of this Project Manual for additional details.

**3.9.2** **Apparent Low Bidder who is a Nonresident Contractor:** Within **ten (10) business days after** receipt of the "**Letter of Intent**" from DAS/CS, a certificate(s) from DRS must be provided which evidences that C.G.S. §12-430 for non-resident contractors has been met. As described in Section 00 92 30 "Procedures Regarding Taxation for Nonresident General/Prime Contractor and Subcontractors", **Verified Nonresident** General/Prime Contractors must submit a copy of their "**Notice of Verified Status**" (Verification Letter) from DRS. **Unverified Nonresident** General/Prime Contractors must submit a copy of **Form AU-965 "Acceptance of Surety Bond"** from DRS.

**3.10 Certificate of Legal Existence: Apparent Low Bidder**

**3.10.1** A **corporation** that is awarded the contract must comply with the laws of this State regarding the procurement of a certificate of authority to transact business in this State from the **Secretary of the State**. A "**Certificate of Legal Existence**" which is not older than **ninety (90) calendar days** from the date of the contract signing must be filed with the DAS/CS Office of Legal Affairs, Policy, and Procurement within **ten (10) business days after** receipt of the "Letter of Intent" from DAS/CS.

**3.11 State Election Enforcement Commission (SEEC) Form 10: Apparent Low Bidder**

**3.11.1** The **Apparent Low Bidder** shall submit a **State Election Enforcement Commission's (SEEC) Form 10** "Notice to Executive Branch State Contractors and Prospective State Contractors of Campaign Contribution and Solicitation Limitations" within **ten (10) business days after** receipt of the "Letter of Intent" from DAS/CS for contracts with a value of \$50,000 or more.

**3.11.2** Pursuant to C.G.S. § 9-612, as revised, a State Contract means an agreement or contract with the state or any state agency or any quasi-public agency having a value in a calendar year of **\$50,000** or more, or a combination or series of such **agreements** or **contracts** having a value of **\$100,000** or more, the **authorized signatory** to this **submission** in response to the State's solicitation expressly **acknowledges receipt** of, and must submit **in writing**, the **SEEC Form 10 notice** advising prospective state contractors of the state campaign contribution and solicitation prohibitions, and will inform its principals of the contents of the **notice**.

**3.11.3** For instructions on how to download "**SEEC Form 10**", go to the SEEC Homepage ([www.ct.gov/seec](http://www.ct.gov/seec)); click on "Forms" at the top of the page; click on "Contractor Reporting Forms"; click on "SEEC Form 10" and follow the directions.

**3.12 OSHA Training Course: Successful Bidder**

**3.12.1** Pursuant to **C.G.S. §. 31-53b (a)**, as revised, each contract entered into for the construction, remodeling, refinishing, refurbishing, rehabilitation, alteration or repair of any public building project by the state or any of its agents, or by any political subdivision of the state or any of its agents, where the total cost of all work to be performed by all contractors and subcontractors in connection with the contract is at least **one hundred thousand dollars (\$100,000)**, shall contain a provision requiring that, not later than **thirty (30) days** after the date such contract is awarded, **each contractor furnish proof to the Labor Commissioner** that all employees performing manual labor on or in such public building, pursuant to such contract, have completed a **course** of at least **ten (10) hours** in duration in **construction safety and health** approved by the federal Occupational Safety and Health Administration or, in the case of telecommunications employees, have completed at least **ten (10) hours** of training in accordance with 29 CFR 1910.268.

**3.13 NEW PROCESS: Contractor and Subcontractor Payments Reporting: Successful Bidder**

**3.13.1** For compliance with **C.G.S. §. 4b-95 and 49-41**, 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, BizNet, **each month and enter payments** they have received from the state, from the Contractor, or from a higher tier Subcontractor (as applicable).

The process is described as follows: The state will pay the Contractor on a monthly basis 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.

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, BizNet, for work performed or purchases made in relation to state projects.

Detailed instructions can be found in the DAS/CS publication, "**6002 Instructions to Contractors/Subcontractors for Entering Payments in BizNet**", available for download by going to the DAS Homepage ([www.ct.gov/DAS](http://www.ct.gov/DAS)) and selecting Doing Business With The State > State Building Construction > Publications and Forms > DAS Construction Services Library > 6000 Series.

**4.0 Nondiscrimination and Affirmative Action**

This contract is subject to Federal and state laws, including Title VII of the 1964 Civil Rights Act, 42 U.S.C. § 2000e-2(a)(1), and the Connecticut Fair Employment Practices Act, C.G.S. §46a-60 et seq., prohibit various forms of discrimination and illegal harassment in employment.

**4.1 Nondiscrimination and Affirmative Action Provisions:**

**4.1.1 This section is inserted in connection with C.G.S. § 4a-60, as revised.**

**4.1.2** References in this section to "contract" **shall** mean this Contract and references to "contractor" **shall** mean the Contractor/Bidder.

**4.1.3 C.G.S. § 4a-60, as revised:**

- (a) Every contract to which the state or any political subdivision of the state other than a municipality is a party shall contain the following provisions:
  - (1) The contractor agrees and warrants that in the performance of the contract such contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of race, color, religious creed, age, marital status, national origin, ancestry, sex, gender identity or expression, intellectual disability, mental disability or physical disability, including, but not limited to, blindness, unless it is shown by such contractor that such disability prevents performance of the work involved, in any manner prohibited by the laws of the United States or of the state of Connecticut; and the contractor further agrees to take affirmative action to insure that applicants with job-related qualifications are employed and that employees are treated when employed without regard to their race, color, religious creed, age, marital status, national origin, ancestry, sex, gender identity or expression, intellectual disability, mental disability or physical disability, including, but not limited to, blindness, unless it is shown by such contractor that such disability prevents performance of the work involved;
  - (2) The contractor agrees, in all solicitations or advertisements for employees placed by or on behalf of the contractor, to state that it is an "affirmative action-equal opportunity employer" in accordance with regulations adopted by the commission;
  - (3) The contractor agrees to provide each labor union or representative of workers with which such contractor has a collective bargaining agreement or other contract or understanding and each vendor with which such contractor has a contract or understanding, a notice to be provided by the commission advising the labor union or workers' representative of the contractor's commitments under this section, and to post copies of the notice in conspicuous places available to employees and applicants for employment;
  - (4) The contractor agrees to comply with each provision of this section and sections 46a-68e and 46a-68f and with each regulation or relevant order issued by said commission pursuant to sections 46a-56, 46a-68e and 46a-68f; and
  - (5) The contractor agrees to provide the Commission on Human Rights and Opportunities with such information requested by the commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the contractor as relate to the provisions of this section and section 46a-56.
- (b) If the contract is a public works contract, the contractor agrees and warrants that he will make good faith efforts to employ minority business enterprises as subcontractors and suppliers of materials on such public works project.



- (c) (1) Any contractor who has one or more contracts with the state or a political subdivision of the state that is valued at less than fifty thousand dollars for each year of the contract shall provide the state or such political subdivision of the state with a written or electronic representation that complies with the nondiscrimination agreement and warranty under subdivision (1) of subsection (a) of this section, provided if there is any change in such representation, the contractor shall provide the updated representation to the state or such political subdivision not later than thirty days after such change.
- (2) Any contractor who has one or more contracts with the state or a political subdivision of the state that is valued at fifty thousand dollars or more for any year of the contract shall provide the state or such political subdivision of the state with any one of the following:
- (A) Documentation in the form of a company or corporate policy adopted by resolution of the board of directors, shareholders, managers, members or other governing body of such contractor that complies with the nondiscrimination agreement and warranty under subdivision (1) of subsection (a) of this section;
- (B) Documentation in the form of a company or corporate policy adopted by a prior resolution of the board of directors, shareholders, managers, members or other governing body of such contractor if (i) the prior resolution is certified by a duly authorized corporate officer of such contractor to be in effect on the date the documentation is submitted, and (ii) the head of the agency of the state or such political subdivision, or a designee, certifies that the prior resolution complies with the nondiscrimination agreement and warranty under subdivision (1) of subsection (a) of this section; or
- (C) Documentation in the form of an affidavit signed under penalty of false statement by a chief executive officer, president, chairperson or other corporate officer duly authorized to adopt company or corporate policy that certifies that the company or corporate policy of the contractor complies with the nondiscrimination agreement and warranty under subdivision (1) of subsection (a) of this section and is in effect on the date the affidavit is signed.
- (3) Neither the state nor any political subdivision shall award a contract to a contractor who has not provided the representation or documentation required under subdivisions (1) and (2) of this subsection, as applicable. After the initial submission of such representation or documentation, the contractor shall not be required to resubmit such representation or documentation unless there is a change in the information contained in such representation or documentation. If there is any change in the information contained in the most recently filed representation or updated documentation, the contractor shall submit an updated representation or documentation, as applicable, either (A) not later than thirty days after the effective date of such change, or (B) upon the execution of a new contract with the state or a political subdivision of the state, whichever is earlier. Such contractor shall also certify, in accordance with subparagraph (B) or (C) of subdivision (2) of this subsection, to the state or political subdivision, not later than fourteen days after the twelve-month anniversary of the most recently filed representation, documentation or updated representation or documentation, that the representation on file with the state or political subdivision is current and accurate.
- (d) For the purposes of this section, "contract" includes any extension or modification of the contract, "contractor" includes any successors or assigns of the contractor, "marital status" means being single, married as recognized by the state of Connecticut, widowed, separated or divorced, and "mental disability" means one or more mental disorders, as defined in the most recent edition of the American Psychiatric Association's "Diagnostic and Statistical Manual of Mental Disorders", or a record of or regarding a person as having one or more such disorders. For the purposes of this section, "contract" does not include a contract where each contractor is (1) a political subdivision of the state, including, but not limited to, a municipality, (2) a quasi-public agency, as defined in section 1-120, (3) any other state, as defined in section 1-267, (4) the federal government, (5) a foreign government, or (6) an agency of a subdivision, agency, state or government described in subparagraph (1), (2), (3), (4) or (5) of this subsection.
- (e) For the purposes of this section, "minority business enterprise" means any small contractor or supplier of materials fifty-one per cent or more of the capital stock, if any, or assets of which is owned by a person or persons: (1) Who are active in the daily affairs of the enterprise, (2) who have the power to direct the management and policies of the enterprise, and (3) who are members of a minority, as such term is defined in subsection (a) of section 32-9n; and "good faith" means that degree of diligence which a reasonable person would exercise in the performance of legal duties and obligations. "Good faith efforts" shall include, but not be limited to, those reasonable initial efforts necessary to comply with statutory or regulatory requirements and additional or substituted efforts when it is determined that such initial efforts will not be sufficient to comply with such requirements.
- (f) Determination of the contractor's good faith efforts shall include but shall not be limited to the following factors: The contractor's employment and subcontracting policies, patterns and practices; affirmative advertising, recruitment and training; technical assistance activities and such other reasonable activities or efforts as the commission may prescribe that are designed to ensure the participation of minority business enterprises in public works projects.
- (g) The contractor shall develop and maintain adequate documentation, in a manner prescribed by the commission, of its good faith efforts.
- (h) The contractor shall include the provisions of subsections (a) and (b) of this section in every subcontract or purchase order entered into in order to fulfill any obligation of a contract with the state and such provisions shall be binding on a subcontractor, vendor or manufacturer unless exempted by regulations or orders of the commission. The contractor shall take such action with respect to any such subcontract or purchase order as the commission may direct as a means of enforcing such provisions including sanctions for noncompliance in accordance with section 46a-56; provided, if such contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the commission, the contractor may request the state of Connecticut to enter into any such litigation or negotiation prior thereto to protect the interests of the state and the state may so enter.

**4.2 Nondiscrimination Provisions Regarding Sexual Orientation:**

**4.2.1 This section is inserted in connection with C.G.S. § 4a-60a, as revised.**

**4.2.2** References in this section to "contract" shall mean this Contract and references to "contractor" shall mean the Contractor/Bidder.

**4.2.3 C.G.S. § 4a-60a, as revised:**

- (a) Every contract to which the state or any political subdivision of the state other than a municipality is a party shall contain the following provisions:
- (1) The contractor agrees and warrants that in the performance of the contract such contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of sexual orientation, in any manner prohibited by the laws of the United States or of the state of Connecticut, and that employees are treated when employed without regard to their sexual orientation;
  - (2) The contractor agrees to provide each labor union or representative of workers with which such contractor has a collective bargaining agreement or other contract or understanding and each vendor with which such contractor has a contract or understanding, a notice to be provided by the Commission on Human Rights and Opportunities advising the labor union or workers' representative of the contractor's commitments under this section, and to post copies of the notice in conspicuous places available to employees and applicants for employment;
  - (3) The contractor agrees to comply with each provision of this section and with each regulation or relevant order issued by said commission pursuant to section 46a-56; and
  - (4) The contractor agrees to provide the Commission on Human Rights and Opportunities with such information requested by the commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the contractor which relate to the provisions of this section and section 46a-56.
- (b) (1) Any contractor who has one or more contracts with the state or a political subdivision of the state that is valued at less than fifty thousand dollars for each year of the contract shall provide the state or such political subdivision of the state with a written representation that complies with the nondiscrimination agreement and warranty under subdivision (1) of subsection (a) of this section.
- (2) Any contractor who has one or more contracts with the state or a political subdivision of the state that is valued at fifty thousand dollars or more for any year of the contract shall provide the state or such political subdivision of the state with any of the following:
- (A) Documentation in the form of a company or corporate policy adopted by resolution of the board of directors, shareholders, managers, members or other governing body of such contractor that complies with the nondiscrimination agreement and warranty under subdivision (1) of subsection (a) of this section;
  - (B) Documentation in the form of a company or corporate policy adopted by a prior resolution of the board of directors, shareholders, managers, members or other governing body of such contractor if (i) the prior resolution is certified by a duly authorized corporate officer of such contractor to be in effect on the date the documentation is submitted, and (ii) the head of the agency of the state or such political subdivision, or a designee, certifies that the prior resolution complies with the nondiscrimination agreement and warranty under subdivision (1) of subsection (a) of this section; or
  - (C) Documentation in the form of an affidavit signed under penalty of false statement by a chief executive officer, president, chairperson or other corporate officer duly authorized to adopt company or corporate policy that certifies that the company or corporate policy of the contractor complies with the nondiscrimination agreement and warranty under subdivision (1) of subsection (a) of this section and is in effect on the date the affidavit is signed.
- (3) Neither the state nor any political subdivision shall award a contract to a contractor who has not provided the representation or documentation required under subdivisions (1) and (2) of this subsection, as applicable. After the initial submission of such representation or documentation, the contractor shall not be required to resubmit such representation or documentation unless there is a change in the information contained in such representation or documentation. If there is any change in the information contained in the most recently filed representation or updated documentation, the contractor shall submit an updated representation or documentation, as applicable, either (A) not later than thirty days after the effective date of such change, or (B) upon the execution of a new contract with the state or a political subdivision of the state, whichever is earlier. Such contractor shall also certify, in accordance with subparagraph (B) or (C) of subdivision (2) of this subsection, to the state or political subdivision, not later than fourteen days after the twelve-month anniversary of the most recently filed representation, documentation or updated representation or documentation, that the representation on file with the state or political subdivision is current and accurate.
- 4) For the purposes of this section, "contract" includes any extension or modification of the contract, and "contractor" includes any successors or assigns of the contractor. For the purposes of this section, "contract" does not include a contract where each contractor is (A) a political subdivision of the state, including, but not limited to, a municipality, (B) a quasi-public agency, as defined in section 1-120, (C) any other state, as defined in section 1-267, (D) the federal government, (E) a foreign government, or (F) an agency of a subdivision, agency, state or government described in subparagraph (A), (B), (C), (D) or (E) of this subdivision.

(c) The contractor shall include the provisions of subsection (a) of this section in every subcontract or purchase order entered into in order to fulfill any obligation of a contract with the state and such provisions shall be binding on a subcontractor, vendor or manufacturer unless exempted by regulations or orders of the commission. The contractor shall take such action with respect to any such subcontract or purchase order as the commission may direct as a means of enforcing such provisions including sanctions for noncompliance in accordance with section 46a-56; provided, if such contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the commission, the contractor may request the state of Connecticut to enter into any such litigation or negotiation prior thereto to protect the interests of the state and the state may so enter.

**End of Section**  
**00 21 13 Instructions to Bidders**



## Pre-Bid Meeting Agenda:

DAS ● Construction Services ● Office of Legal Affairs, Policy, and Procurement

### 1.0 Pre-Bid Meeting:

**1.1** The Owner/Construction Administrator will conduct a Pre-Bid Meeting.  
For the Pre-Bid Meeting Date, Time, and Location see Section 00 11 16 Invitation To Bid for this Specific Bid.

**1.2 Attendance:**

<b>1.2.1 General Contractor:</b>	Attendance at the Pre-Bid Meeting is <b>MANDATORY</b> . At the Pre-Bid Meeting, all prospective bidders shall <i>sign</i> his or her name on the <b>official roster</b> and <i>list</i> the name and address of the company he or she represents. For <b>MANDATORY</b> Pre-Bid Meetings, this shall be done no later than the designated <b>start time</b> of the Pre-Bid Meeting. Prospective bidders are advised to register early as <b>no</b> attendee will be allowed to register <i>after</i> the advertised start time. <b>Bids</b> submitted by contractors who have <i>not properly</i> registered and attended the <b>MANDATORY</b> Pre-Bid Meeting <i>shall be rejected as non-responsive</i> .
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<b>1.2.2 Subcontractors:</b>	Attendance at the Pre-Bid Meeting is recommended.
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<b>1.2.3 Pre-Bid Meeting Sign-in Sheet:</b>	It is <b>MANDATORY</b> that all attendees sign the <b>Pre-Bid Meeting Sign-in Sheet</b> .
---	---

**1.3 Bidder Questions:**

<b>1.3.1</b>	Submit <b>written</b> questions to be discussed at the Pre-Bid Meeting a <b>minimum of two (2) Calendar Days prior</b> to Pre-Bid Meeting date. See the <b>Invitation to Bid</b> for instructions on submitting questions.
--------------	--

### 2.0 Pre-Bid Meeting Agenda:

The Pre-Bid Meeting Agenda will include a review of topics, **as applicable to the Project**, which may affect proper preparation and submittal of bids, including, but not limited to, the following:

**2.1 Procurement and Contracting Requirements:**

- |               |  |
|---------------|--|
| <b>2.1.1</b>  | <b>Section 00 11 16 – Invitation to Bid</b>                            |
| <b>2.1.2</b>  | <b>Section 00 21 13 – Instructions to Bidders</b>                      |
| <b>2.1.3</b>  | <b>Section 00 41 00 – Bid Proposal Form</b>                            |
| <b>2.1.4</b>  | <b>Section 00 41 10 – Bid Package Submittal Requirements</b>           |
| <b>2.1.5</b>  | <b>Section 00 30 00 – General Statements for Available information</b> |
| <b>2.1.6</b>  | <b>Division 50 – Project-Specific Available Information</b>            |
| <b>2.1.7</b>  | <b>Bonding</b>   |
| <b>2.1.8</b>  | <b>Insurance</b>   |
| <b>2.1.9</b>  | <b>Bid Security</b>  |
| <b>2.1.10</b> | <b>Notice of Award</b>   |

**2.0 Pre-Bid Meeting Agenda (continued):**

**2.2 Communication During Bidding Period:**

- |       |   |
|-------|---|
| 2.2.1 | Obtaining Bid Documents   |
| 2.2.2 | Access to DAS Website, BizNet, and State Contracting Portal                       |
| 2.2.3 | Bidder's Requests for Information: See General Requirements Sections 01 26 00     |
| 2.2.4 | Substitution Procedures (Prior to Bid): See General Requirements Section 01 25 00 |
| 2.2.5 | Substitutions following Contract Award: See General Requirements Section 01 25 00 |
| 2.2.6 | Addenda Procedures: See Item No. 2.8 of this form                                 |

**2.3 Contract Considerations:**

- |       |   |
|-------|---|
| 2.3.1 | Allowances: See General Requirements Section 01 20 00       |
| 2.3.2 | Unit Prices: See General Requirements Section 01 20 00      |
| 2.3.3 | Supplemental Bid: See General Requirements Section 01 23 13 |

**2.4 Construction Documents:**

- |       |  |
|-------|--|
| 2.4.1 | Summary of Work: See General Requirements Section 01 11 00                   |
| 2.4.2 | Temporary Facilities and Controls: See General Requirements Section 01 50 00 |
| 2.4.3 | Work Sequence: See General Requirements Section 01 11 00                     |
| 2.4.4 | Contractor Use of Premises: See General Requirements Section 01 11 00        |

**2.5 Separate Contracts:**

- |       |                         |
|-------|-------------------------|
| 2.5.1 | Work by Owner           |
| 2.5.2 | Work of Other Contracts |

**2.6 Project Schedule:**

- |       |                        |
|-------|------------------------|
| 2.6.1 | Project Schedule       |
| 2.6.2 | Contract Time          |
| 2.6.3 | Liquidated Damages     |
| 2.6.4 | Other Bidder Questions |

**2.7 Site/Facility Visit or Walkthrough:**

- |       |   |
|-------|---|
| 2.7.1 | <input checked="" type="checkbox"/> A Site/Facility Visit or Walkthrough is scheduled for the Pre-Bid Meeting |
| 2.7.2 | <input type="checkbox"/> A Site/Facility Visit or Walkthrough is <b>NOT</b> scheduled for the Pre-Bid Meeting |

**2.8 Post Pre-Bid Meeting Addendum:**

2.8.1	<p><b>No Interpretations</b> of the meaning of the plans, specifications or other contract documents will be made orally at any time. Every bidder <b>request</b> for such interpretation <b>shall</b> be in writing to the awarding authority and to be given consideration <b>shall</b> be received at least <b>fourteen (14)</b> Calendar Days <b>prior</b> to the Bid Due Date. Any and all such <b>interpretations</b> and any <b>supplemental instructions</b> will be in the form of written <b>addenda</b> to the specifications which, <i>if</i> issued, will be posted on the State Contracting Portal.</p>
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**3.0 Pre-Bid Meeting Minutes:**

**3.1 Recording and Distribution of Pre-Bid Meeting Minutes:**

**3.1.1** The **Owner/Construction Administrator** is responsible for conducting the Pre-Bid Meeting and will record and distribute meeting minutes to attendees **and others known by the issuing office to have received a complete set of Procurement and Contracting Documents.**

**3.2 Pre-Bid Meeting Minutes as “Available Information”**

**3.2.1** Minutes of the Pre-Bid Meeting are issued as “Available Information” and **do not** constitute a modification to the Procurement and Contracting Documents. **Modifications to the Procurement and Contracting Documents are issued by written Addendum only.**

**3.3 Pre-Bid Meeting Sign-in Sheet:**

**3.3.1** Minutes will include the list of meeting attendees.

**3.4 List of Planholders:**

**3.4.1** Minutes will include the list of planholders.

**End of Section  
00 25 13 Pre-Bid Meeting Agenda**





**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 Survey	<input type="checkbox"/>
00 30 20	General Statement for Environmental Assessment Information	<input checked="" type="checkbox"/>
00 30 30	General Statement for Hazardous Building Materials Inspection and Inventory	<input type="checkbox"/>
00 30 40	General Statement for Subsurface Geotechnical Report	<input checked="" type="checkbox"/>
00 30 50	General Statement for Elevator Agreement	<input checked="" type="checkbox"/>
00 30 60	General Statement for FM Global Checklist for Roofing Systems	<input type="checkbox"/>

**00 30 10 GENERAL STATEMENT FOR EXISTING CONDITIONS SURVEY Not Used**

- A. The “**Existing Conditions Survey**” for this project is located in **Division 50 00 00 Project-Specific Available 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.

**End of Section**

**00 30 10 General Statement for Existing Conditions Survey**

<b>00 30 20</b>	<b>GENERAL STATEMENT FOR ENVIRONMENTAL ASSESSMENT INFORMATION</b>	Not Used <input checked="" type="checkbox"/>
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<b>00 30 30</b>	<b>GENERAL STATEMENT FOR HAZARDOUS BUILDING MATERIALS INSPECTION AND INVENTORY</b>	Not Used <input type="checkbox"/>
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**A. Related Documents:**

**Asbestos Abatement:**

- Section 01 20 00 Contract Considerations
- Section 01 35 16 Alteration Project Procedures
- Section 02 82 13 Asbestos Containing Roofing Material Abatement

**Lead-Based Paint Abatement:**

- Section 01 20 00 Contract Considerations
- Section 01 35 16 Alteration Project Procedures
- Section 02 83 00 Lead Paint Activity

**PCBs in Building Materials Abatement**

- Section 01 20 00 Contract Considerations
- Section 01 35 16 Alteration Project Procedures
- Section 02 84 33 Removal and Disposal of PCBs

**B. Description of Work:**

<b>1.</b>	<b>Work Involving Asbestos Containing Material (ACM):</b>	Not Used <input type="checkbox"/>
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- 1.1 Testing for asbestos has been conducted at the facility scheduled for renovation, demolition, reconstruction, alteration, remodeling, or repair. Results of the asbestos testing are summarized in **Division 50 00 00 Project-Specific Available Information, Section 50 30 00 Hazardous Building Materials Inspection and Inventory** at the end of the Technical Specification Sections.
- 1.2 Under no circumstance shall this information be the sole means used by the Contractor for determining the extent of asbestos. The Contractor shall be responsible for verification of all field conditions affecting performance of the Work.

<b>2.</b>	<b>Work Involving Lead-Based Paint (LBP):</b>	Not Used <input type="checkbox"/>
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- 2.1 If this facility was constructed **prior to 1978** it is likely to have painted surfaces containing lead-based paint (LBP).
- 2.2 Testing for lead-based paint has been conducted at the facility scheduled for renovation, demolition, reconstruction, alteration, remodeling, or repair. Results of the LBP testing are summarized in **Division 50 00 00 Project-Specific Available Information, Section 50 30 00 Hazardous Building Materials Inspection and Inventory** at the end of the Technical Specification Sections. Under no circumstance shall this information be the sole means used by the Contractor for determining the extent of LBP.
- 2.3 The Contractor shall be responsible for verification of all field conditions affecting performance of the Work.

<b>3.</b>	<b>Work Involving Polychlorinated Biphenyls (PCBs) in Building Materials:</b>	Not Used <input type="checkbox"/>
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- 3.1 If this facility was constructed **between 1950 and 1978** it is likely to have caulk and/or glazing containing PCBs.
- 3.2 Testing for PCBs has been conducted at the facility scheduled for renovation, demolition, reconstruction, alteration, remodeling, or repair. Results of the PCB testing are summarized in **Division 50 00 00 Project-Specific Available Information, Section 50 30 00 Hazardous Building Materials Inspection and Inventory** at the end of the Technical Specification Sections.

- 3.3 The Contractor shall be responsible for verification of all field conditions affecting performance of the Work.

**4. Work Involving Mold:** Not Used

**5. Work Involving Universal Wastes** Not Used   
(Products Containing Persistent Bioaccumulative Toxic Chemicals (PBT's)):

- 5.1 A Universal Waste Inventory for products containing Persistent Bioaccumulative Toxic Chemicals (PBTs) such as Polychlorinated Biphenols (PCBs), Di-2-ethylhexyl Phthalate (DEHP), and Mercury, has been conducted at the facility scheduled for renovation, demolition, reconstruction, alteration, remodeling, or repair. Results of the inventory are summarized in **Division 50 00 00 Project-Specific Available Information, Section 50 30 00 Hazardous Building Materials Inspection and Inventory** at the end of the Technical Specification Sections.
- 5.2 The Contractor shall be responsible for verification of all field conditions affecting performance of the Work.
- 5.3 Examples of PBT materials include fluorescent light fixtures and exit signs, ballasts, high density discharge (HID) lamps, certain types of construction products containing vinyl, and mercury containing electrical switches and thermostats; for the purposes of this paragraph, PCB's in building material such as caulk and glazing or any other type of material not listed above is not applicable to this paragraph.

**End of Section**

**00 30 30 General Statement for Hazardous Building Materials Inspection and Inventory**

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

**00 30 50 GENERAL STATEMENT FOR ELEVATOR AGREEMENT** Not Used

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

**A. Related Documents:**

1. **Section 01 35 16 Alteration Project Procedures;**
2. **Section 07 52 00 Elastomeric Membrane Roofing.**

**B. Description of Work:**

1. Work Involving FM Global requirements for Existing Roof Removal and Replacement With New Roof:
  - 1.1 The Contractor shall be responsible for adhering to FM Global Checklist Requirements for Roof Removal and Replacement with New Roofing. See Section 01 11 00 Summary of Work, Section 06 10 00 Rough Carpentry, Section 07 52 00 Elastomeric Membrane Roofing, and Section 07 62 00 Sheet Metal and Flashing for additional technical specifications and Contractor responsibilities.
  - 1.2 Refer to the **FM Global Data Sheet Website** (<http://www.fmglobal.com/fmglobalregistration/>) and the **FM Global Roof Design / Approval Web Tool - RoofNav** (<https://roofnav.fmglobal.com/RoofNav/Login.aspx>).
  - 1.3 A sample of the FM Global Checklist is located in **Division 50 00 00 Project-Specific Available Information, 50 60 00 FM Global Checklist For Roofing Systems** at the end of the Technical Specification Sections.
  - 1.4 **Included FM Data Sheets and Documents:**  
Samples of the following FM Global Documents are located in **Division 50 00 00 Project-Specific Available Information, 50 60 00 FM Global Hot Work Requirements** at the end of the Technical Specification Sections.  
Publication: DS Managing Fire Protection System Impairment  
Publication: Don't Get Burned by Hot Work  
Hot Work Permit Form F2360

**15 Other Applicable FM Data Sheets and Documents:**

DS 1-28 *Wind Design*

DS 1-29 *Roof Deck Securement and Above-Deck Roofing Components*

DS 1-49 *Perimeter Flashing*

DS 1-52 *Field Verification of Roof Wind Uplift Resistance*

Publication: FM Global Red Tag System

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**End of Section**

**00 30 60 General Statement for FM Global Checklist for Roofing Systems**

**End of Section**

**00 30 00 General Statements for Available Information**

**Certificate (of Authority)**

**DAS Construction Services Project No.:**

I  ,   
*(Signer's Name)<sup>1</sup> (Signer's Title)*

of  , an entity lawfully organized and existing under the laws  
*(Name of Entity)*

of  , do hereby certify that the following is a true and correct  
*(Name of State or Commonwealth)*

copy of a resolution adopted on the  day of  , 20  by the governing body of  
*(Day)<sup>2</sup> (Month)<sup>2</sup> (Year)<sup>2</sup>*

, in accordance with all of its documents of governance and  
*(Name Of Entity)*

management and the laws of  and further certify that such resolution has not  
*(Name of State or Commonwealth)*

been modified, rescinded or revoked, and is at present in full force and effect.

**RESOLVED:** that  ,   
*(Name of Signer of Contract Documents)<sup>3</sup> (Title of Signer of Contract Documents)<sup>3</sup>*

of  is empowered and authorized, on behalf of the entity,  
*(Name of Entity)*

to execute and deliver contracts and amendments thereto, and all documents required by the Governor, the Connecticut Department of Administrative Services, the Connecticut State Properties Review Board and the Office of the Attorney General associated with such contracts and amendments.

IN WITNESS WHEREOF, the undersigned has executed this certificate this  day of  , 20  .  
*(Day)<sup>4</sup> (Month)<sup>4</sup> (Year)<sup>4</sup>*

*(Signature)*

*(Print Name)*

*(Title)*

**Reference Notes:**

- 1 The signer of this certificate must be someone *other than* the signer of the contract documents *except for* a sole managing member of an LLC or the sole officer or sole principal of a corporation. *If* the signer is a sole managing member of an LLC, *then* along with this certificate the signer must provide a letter on company letterhead that indicates the signer is a sole member and managing member. If the signer is the sole officer or sole principal of a corporation, then the signer must provide with the certificate a letter on company letterhead setting forth this fact.
- 2 This date must be on or before the **date of signing** of the Bid Proposal (or Contract).
- 3 This person shall sign the Contract and other required documents.
- 4 This date must be on or after the **date of signing** of the Bid Proposal (or Contract).

**For Your Information:**

**Certificate (of Authority)**

**All Bidders:**

**Complete page 1, print, sign, and scan to PDF. Upload the PDF form to BizNet.**

What the **Certificate** is saying is that the organization authorized the signatory to sign the pertinent **documents other than** the Certificate (of Authority) and that, as of the date of **execution** of the CERTIFICATE (i.e., the date set forth in the "In Witness Whereof" blanks) there has been no change in that authorization.

**Instructions For Completing The Certificate (of Authority)**

**The Certificate (of Authority) to Accompany the Bid Proposal Form:**

**1. 1<sup>st</sup> Paragraph:**

- 1.1 First, enter the name and title of the individual signing the Certificate (of Authority).
- 1.2 Second, enter the legal name of the entity (exactly as it is shown on the Secretary of State registry).
- 1.3 Third, enter the name of the state or commonwealth the entity is registered in.
- 1.4 Fourth, enter the date the resolution was adopted by the governing body. This **date** is **on** or **before** the date the **Bid Proposal** is signed.
- 1.5 Fifth, enter the name of the state or commonwealth the entity is registered in.

**2. 2<sup>nd</sup> Paragraph:**

- 2.1 First, enter the name and title of the individual signing bid documents for the entity.
- 2.2 Second, enter the legal name of the entity (exactly as it is shown on the Secretary of State registry).

**3. Last Paragraph:**

- 3.1 Enter the **Witness Date**<sup>1</sup>. This date will likely be the date of execution of the **Bid Proposal form**.

<sup>1</sup> ***This Witness Date Should Not Be Before The Date Of Execution Of The Bid Proposal.***

**The Certificate (of Authority) to Accompany the Contract:**

**1. 1<sup>st</sup> Paragraph:**

- 1.1 First, enter the name and title of the individual signing the Certificate (of Authority).
- 1.2 Second, enter the legal name of the entity (exactly as it is shown on the Secretary of State registry).
- 1.3 Third, enter the name of the state or commonwealth the entity is registered in.
- 1.4 Fourth, enter the date the resolution was adopted by the governing body. This **date** is **on** or **before** the date the **Contract** is signed.
- 1.5 Fifth, enter the name of the state or commonwealth the entity is registered in.

**2. 2<sup>nd</sup> Paragraph:**

- 2.1 First, enter the name and title of the individual signing contract documents for the entity.
- 2.2 Second, enter the legal name of the entity (exactly as it is shown on the Secretary of State registry).

**3. Last Paragraph:**

- 3.1 Enter the **Witness Date**<sup>1</sup>. This date will likely be the date of execution of the **Contract**.

<sup>1</sup> ***This Witness Date Should Not Be Before The Date Of Execution Of The Contract.***

**End of Section 00 40 14 Certificate (of Authority)**

# State of Connecticut Department of Administrative Services (DAS) Contractor Prequalification Forms

**IMPORTANT INFORMATION – PLEASE READ**  
For Projects with estimated Construction Costs greater than \$500,000

**WHEN YOU SUBMIT A BID YOU MUST INCLUDE WITH YOUR OTHER DOCUMENTS THE FOLLOWING:**

1. A copy of your “DAS Contractor Prequalification Certificate”.

This document may be found at the [DAS Contractor Prequalification Search](#):

Go to the DAS Homepage ([www.ct.gov/DAS](http://www.ct.gov/DAS)), click on “Doing Business with the State”, click on “Apply for DAS Construction Contractor Prequalification”, click on “How To”, and then click on “Search Prequalified Companies”.

To search for your company, just type in your company name and click on “Go” to pull up your company. When your company information appears you will notice that your company name is shown as a blue link. Just click on this link and it will take you to your Prequalification Certificate.

2. A “DAS Update (Bid) Statement”.

This document may be found and completed on-line at the [Bid Statement Online Application](#).

Go to the DAS Homepage ([www.ct.gov/DAS](http://www.ct.gov/DAS)), click on “Doing Business with the State”, click on “Apply for DAS Construction Contractor Prequalification”, click on “Documents/Forms”, click on “Update Bid Statement”, and then click on “Bid Statements”.

Follow instructions in the “[Instructions for Prequalification](#)”.

Go to the DAS Homepage ([www.ct.gov/DAS](http://www.ct.gov/DAS)), click on “Doing Business with the State”, click on “Apply for DAS Construction Contractor Prequalification”, click on “How To”, and then click on “View Instructions for Prequalification”.

**Should you have any questions or concerns, please call (860) 713-5280.**



» **DAS Contractor Prequalification Certificate**

**Contractor Prequalification Company Information**

**Company:** **Sample Corporation**

**Address:** 165 Capitol Avenue  
 Hartford, CT 06106

**Prequalification Contact:** **John T. Reed**

**Telephone:** (860) 111-2222

**Fax:** (860) 111-3333

**Email:** [jreed@samplecorp.com](mailto:jreed@samplecorp.com)

**Web Addr:** [www.samplecorp.com](http://www.samplecorp.com)

**Contractor Prequalification History**

Active Date	Expiration Date	Single Project	AWC
Oct 8, 2004	Oct 7, 2005	\$20,000,000.00	\$50,000,000.00

**Prequalification Classification(s)**

Classification	Description
GENERAL BUILDING CONSTRUCTION (GROUP C)	The undertaking of general contracts for the construction of buildings (i.e. new construction, renovation, rehabilitation, alteration, addition, etc.). The contract must include a variety of construction practices and supervision of a minimum of three sub-trades. Includes buildings that are truly custom, requiring extensive detailing, or that have large amounts of integrated scientific or complex mechanical/electrical equipment in order for them to function. Examples include hospitals, chemistry buildings, special collections buildings, historic preservation to a landmark structure, and/or any other structure that is truly one of a kind within the State's inventory.  Note: If you are prequalified for General Building Construction under Group C, you are automatically prequalified for Group A and Group B.

**Prequalification Licenses**

License #	Trade	Active	Expire
000009	Asbestos Contractor	Sep 8, 2004	Aug 31, 2005
900235	Major Contractor	Jul 1, 2004	Jun 30, 2005
667 Class A	Demolition Contractor	Apr 1, 2004	Mar 31, 2005

*This certificate prequalifies the named company to bid solely. It is not a statement of the company's capacity to perform a specific project. That responsibility lies with the awarding authority.*

*It is the Department of Administrative Services' (DAS) recommendation that all awarding authorities verify the above information by visiting the DAS website: <http://www.das.state.ct.us> - click on contractor prequalification (under the business section).*

*For information regarding the DAS Contractor Prequalification Program visit the above mentioned website or call (860) 713-5280.*

<a href="#">eProcurement</a>   <a href="#">Business</a>   <a href="#">Event Services</a>   <a href="#">Jobs</a>   <a href="#">Human Resources</a>   <a href="#">Resource Director</a>   <a href="#">News</a>	
<a href="#">CT.gov Home</a>   <a href="#">About DAS</a>   <a href="#">Contact DAS</a>   <a href="#">Press Room</a>   <a href="#">DAS Home</a>   <a href="#">Quick Links</a>   <a href="#">FAQ</a>   <a href="#">Site Map</a>	
	The Department of Administrative Services. <a href="#">Review our Privacy Policy.</a> All State disclaimers and permissions apply. Need to contact us? Send e-mail to <a href="mailto:das.webmaster@state.ct.us">das.webmaster@state.ct.us</a>
Copyright ©2001, 2002, 2003, 2004 - Last Updated: Saturday, October 09, 2004	
	The software to view and print Adobe Acrobat documents (PDF Files) is available free from the Adobe website. To get a free copy of the software, click the "Get Acrobat" image.



**State of Connecticut**  
**Department of Administrative Services (DAS) Contractor Prequalification**  
**Update Bid Statement**  
 (Statement to be included with the bid)

**Public Act No. 04-141 - AN ACT REVISING PREQUALIFICATION REQUIREMENTS FOR STATE CONSTRUCTION CONTRACTS.**

On and after October 1, 2004, each bid submitted for a contract shall include a copy of a prequalification certificate issued by the Commissioner of Administrative Services. The bid shall also be accompanied by an update statement in such form as the Commissioner of Administrative Services prescribes. The form for such update statement shall provide space for information regarding all projects completed by the bidder since the date the bidder's prequalification certificate was issued or renewed, all projects the bidder currently has under contract, including the percentage of work on such projects not completed, the names and qualifications of the personnel who will have supervisory responsibility for the performance of the contract, any significant changes in the bidder's financial position or corporate structure since the date the certificate was issued or renewed, any change in the contractor's qualification status, and such other relevant information as the Commissioner of Administrative Services prescribes. Any bid submitted without a copy of the prequalification certificate and an update statement shall be invalid.

<b>Name of Project that company</b>	SAMPLE	
<b>Project Number:</b>		
<b>Name of Company:</b>		
<b>FEIN:</b>		
<b>Company Address:</b>		
<b>Prequalification Contact and Telephone Number</b>		
<b>Date of Prequalification with the DAS:</b>	<b>Single Limit:</b>	<b>Aggregate Work Capacity (AWC):</b>
* This amount equals your company's AWC minus the Total \$ Amount of Work Remaining.		<b>* Remaining Aggregate Work Capacity:</b>

**Please list all of your company's (100%) completed projects since date of Prequalification:**  
 (Please add additional page(s) if required)

Name of Project	Owner of Project	Date Project Completed	Total Contract Amount

(Please add additional page(s) if required. Please total the Work Remaining column)

Name of Project	Owner of Project	Total Contract Amount	% Complete	Work Remaining (\$)
<b>Total \$ Amount of Work Remaining</b>				→

Please list the names and titles of the personnel who will have supervisory responsibility for the performance of the contract being bid on:  
(Please add additional page(s) if required)

Individual Name	Individual
<b>SAMPLE</b>	

Have there been any other business organizations, which might affect your company's ability to successfully complete this contract?

Yes or No

If yes, please explain:

I, certify under penalty of law that all of the information contained in this Update Statement is true and accurate to the best of my knowledge as of the date below.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

It is the responsibility of the Awarding Authority to determine if any of the information provided above will impact the contractor's performance on this project.

**The DAS' Contractor Prequalification Program can be reached at (860) 713-5280**

Rev.12.22.2004

## Bid Proposal Form

DAS ● Construction Services ● Office of Legal Affairs, Policy, and Procurement  
 450 Columbus Boulevard, Suite 1302 ● Hartford, CT 06103

<b>Date and Time of Bid Opening:</b>	See page 1 of Section 00 11 16 Invitation To Bid.
<b>Instructions for On-Line Bidding:</b>	Follow the instructions in <a href="#">6001 Construction On-line Bidding Instructions</a> , available for download from the DAS/CS Library ( <a href="http://portal.ct.gov/DASCSLibrary">http://portal.ct.gov/DASCSLibrary</a> ) > 6000 Series – Bid Phase Forms. For questions, call 860-713-5794 or 860-713-5783.

- Instructions for Completing This Bid Proposal Form:**
- **Download** and **save** the Bid Proposal Form to your computer. Close the form. Open your *saved* Bid Proposal Form and type required information in blue boxes. (Remember to keep saving to your computer.)
  - On your Word Toolbar, **click “View” then “Edit Document” or “Print Layout”** in order to edit the form.
  - When your Bid Proposal Form is complete, perform a final “save” to your computer! **Print ALL pages and sign** your Bid Proposal Form. **Scan ALL** pages of your Bid Proposal Form to **PDF**. Upload the **PDF** Bid Proposal Form to BizNet.
  - **Duly Authorized Signature:** A duly authorized representative of the Bidder or Bidder’s partnership, firm, corporation or business organization must sign the Bid Proposal Form.
  - **No Facsimile Signature** is permitted. **All information below** is to be filled in by the **Bidder**.
  - *If an Addendum is issued that **changes** the **Bid Proposal Form** then the **Revised Bid Proposal Form** (issued with the Addendum) **must** be uploaded instead.*
  - Upload to BizNet **only** the additional **Bid Package Documents** as described in **Table 1** of **Section 00 41 10 Bid Package Submittal Requirements**.
  - A signed and scanned **Certificate (of Authority)**, **Section 00 40 14**, **must** be uploaded to Biznet **prior** to the date and time of the Bid Opening.
  - *Any **Bid Proposal Form** that has omitted or added items, altered the form, contains conditional, alternative, or obscure bids, or is submitted *without* the signature of the bidder or its authorized representative, **will be rejected**.*
  - See **Section 00 21 13 Instructions to Bidders** for additional information.

<b>1.0 General Bid Proposal Information:</b>	
<b>Construction Costs:</b>	Greater Than \$500,000
<b>Bidding Limited To :</b>	Contractors Prequalified by DAS for General Building Construction (Group A)
<b>Threshold Limits: (C.G.S. §29-276b)</b>	This Project DOES NOT exceed Threshold Limits.
<b>Set Aside Requirements:</b>	SBE Subcontractors &/or Suppliers: 25%; MBE Subcontractors &/or Suppliers: 6.25%
<b>Project Title:</b>	Roof Replacement and Weatherproofing
<b>Project Location:</b>	460/470 Capitol Avenue, Hartford, CT
<b>Project Number:</b>	<b>BI-2B-433</b>
<b>Pre-Bid Meeting:</b>	See <b>Section 00 11 16 Invitation to Bid</b> and <b>Section 00 25 13 Pre-Bid Meeting</b> .
<b>Plans and Specifications prepared by A/E:</b>	Gale Consultants, Inc., 703 Hebron Avenue, Glastonbury, CT 06033

**1.1 Commencement and Acceptance:** (See Section 00 73 13 General Conditions, Article 4 - Commencement and Progress of Work and Article 1 - Definitions)

The Selected Bidder shall commence Work within **fourteen (14) Calendar Days after** receiving a “**Construction Start Date and Notice to Proceed**” by the Commissioner or authorized representative and continue for 

120
90

**Calendar Days** for “**Substantial Completion**” of the project; **and** then continue 

90
----

**Calendar Days** for “**Acceptance**” of the Work.

**1.2 Liquidated Damages:** (See Section 00 73 13 General Conditions, Article 8 – Damages & Article 1 - Definitions)

**1.2.1 Liquidated Damages – Substantial Completion:**

The Selected Bidder shall be assessed \$ 

1,815.00
----------

 per **Calendar Day beyond** the date established for Substantial Completion of the Contract according to the **Contract Time** as defined in **Article 1.28 of Section 00 73 13 General Conditions**, and not otherwise excused or waived pursuant to the Contract Documents, as defined in **Article 1.23 of Section 00 73 13 General Conditions**.

**1.2.2 Liquidated Damages – Acceptance:**

The Selected Bidder shall be assessed \$ 

1,815.00
----------

 per **Calendar Day beyond ninety (90) days after** the date of said Substantial Completion that the Selected Bidder fails to achieve **Acceptance**, as defined in **Article 1.1 of Section 00 73 13 General Conditions** and not otherwise excused or waived as described above.

**1.3 Bid Proposal Statements and Conditions:** This **Bid Proposal Form** shall be submitted according to, and in compliance with, the foregoing and following statements, conditions, and/or information:

**1.3.1** This Bid Proposal Form is submitted in accordance with Chapter 60 Construction And Alterations Of State Buildings, Part II Bidding And Contracts of the Connecticut General Statutes (C.G.S.), as amended, particularly C.G.S. § 4b-91(a)(5)(A) – (C), and pursuant to, and in compliance with, the **Invitation to Bid** (Section 00 11 16), the **Instructions to Bidders** (Section 00 21 13), the **Bid Package Submittal Requirements** (Section 00 41 10), and the **Contract** (Section 00 52 03).

**1.3.2** The Bidder proposes to furnish the labor and/or materials, installed as required for the Project named and numbered on this **Bid Proposal Form**, submitted herein, furnishing all necessary equipment, machinery, tools, labor and other means of construction, and all materials specified in the manner and at the time prescribed strictly in accordance with the provisions of the **Contract** including, but not limited to, the specifications and/or drawings together with all **Addenda** issued by the Awarding Authority and received by the Bidder, prior to the scheduled **Date and Time of the Bid Opening** as stated on **page 1** of the **Invitation To Bid**, and in conformity with requirements of the Awarding Authority and any laws or Departmental regulations of the State of Connecticut or of the United States which may affect the same, for and in consideration of the price(s) stated on this **Bid Proposal Form**, hereof.

**1.3.3** The Bidder acknowledges that the **Proposed Lump Sum Base Bid** submitted on this **Bid Proposal Form** includes all work indicated on the drawings and/or described in the specifications, **except** for the **Contingent Work** described in **Subsection 2.4**.

**1.3.4** The Bidder acknowledges and agrees to furnish all labor and materials required for this **Project**, in accordance with the accompanying **Plans and Specifications** prepared by the **Architect/Engineer** listed on **page 1** of this Bid Proposal Form, for the **Contract Sum** specified in the **Proposed Lump Sum Base Bid** in **Subsection 2.1** of this Bid Proposal Form, subject to **additions** and **deductions** according to the terms of the specifications, and including the number of **Addenda** stated in **Subsection 2.2** of this Bid Proposal Form.

**1.4 Award:**

**1.4.1** All Bid Proposals shall be subject to the provisions of **Section 00 21 13 Instructions to Bidders** and for purpose of award, consideration shall be given only to Bid Proposals submitted by qualified and responsible Bidders.

**1.4.2** The award shall be made on the **lowest Lump Sum Bid** and any or all **Supplemental Bid(s)** as stated in **Subsection 2.4.2** of this **Bid Proposal Form**, taken sequentially, as applicable, provided funds are available.

**1.4.4** In the event of any **discrepancy** between the amount written in words and the amount written in numerical figures, the amount written in words shall be controlling.

**2.0 Bid Proposal Requirements:**

**Bidder Information:**

**Bid Uploaded On:**     
 (Month) (Day) (Year)

**Proposal Of:**   
 (Complete Bidder's Legal Company Name As Registered With the CT Secretary of State)

**Firm Address:**  ,  ,    
 (Avenue / Street) (Town / City) (State) (Zip Code)

**Contact Person:**    
 (Name) (Title)

**Contact Information:**     
 (Phone Number) (Fax Number) (Email Address)

**Threshold Project: Major Contractor Registration License No.:**

All Bidders for Projects that exceed Threshold Limits (see page 1 of this Bid Proposal Form): Insert your Firm's Major Contractor Registration License Number in the space provided above. **NOTE:** If this Project does NOT exceed Threshold Limits, insert "Not Applicable" in the blue box above. Delete this note by pressing the spacebar.

**2.1 Proposed Lump Sum Base Bid:**

**2.1.1 All Bidders:** Insert the Proposed Lump Sum Base Bid in the spaces provided below, including both numerical figures and "printed words" dollar amount. The Proposed Lump Sum Base Bid shall include all Allowances, all work indicated on the drawings and/or described in the specifications except for Contingent Work.

**2.1.2** The Proposed Lump Sum Base Bid shall be shown in both numerical figures and "printed words" dollar amount. In the event of any discrepancy the "printed" words dollar amount shall govern.

**2.1.3** The Proposed Lump Sum Base Bid is:

\$   
 (Place Numerical Figures in the Box Above)

Dollars  
 (Insert "Printed Words" Dollar Amount in the Box Above)

**2.2 Number of Addenda:**

**2.2.1 All Bidders:** Insert the Number of Addenda issued by the State of Connecticut in the space provided below.

**2.2.2** Failure to acknowledge the correct number of all Addenda in the box below in this Bid Proposal Form shall cause rejection of the bid.

**2.2.3** The Bidder acknowledges that their Proposed Lump Sum Base Bid Proposal includes:

Number of Addenda. If none, enter "0".

**2.3 Allowances:**

See Section 01 20 00 Contract Considerations in Division 01 General Requirements for Allowances for applicability.

**2.4 Contingent Work:**

**2.4.1 Base Bid Quantities and Defined Unit Prices:** See **Section 01 20 00 Contract Considerations** in Division 01 General Requirements for **applicability** regarding Base Bid Quantities and Defined Unit Prices for Earth and Rock Excavation, Miscellaneous Items, Alterations Items, Environmental Remediation, and/or Hazardous Building Materials Abatement.

**2.4.2 Supplemental Bids:**

.1 See **Section 01 23 13 Supplemental Bids** in Division 01 General Requirements for **applicability**.

.2 **All Bidders: If Supplemental Bids are applicable** to this Project, insert the **Supplemental Bids** in the spaces provided below. Any **Supplemental Bids** listed below, *if* accepted by the Owner, will be taken cumulatively and in numerical order as scheduled. No Supplemental Bid will be skipped or taken out of numerical order as scheduled.

<b>Supplemental Bid No. 1: NOT APPLICABLE</b>		
ADD: \$	<input type="text"/>	<input type="text"/> Dollars
	<i>(Insert Numerical Figures)</i>	<i>(Insert "Printed Words" Dollar Amount)</i>
<b>Supplemental Bid No. 2: NOT APPLICABLE</b>		
ADD: \$	<input type="text"/>	<input type="text"/> Dollars
	<i>(Insert Numerical Figures)</i>	<i>(Insert "Printed Words" Dollar Amount)</i>
<b>Supplemental Bid No. 3: NOT APPLICABLE</b>		
ADD: \$	<input type="text"/>	<input type="text"/> Dollars
	<i>(Insert Numerical Figures)</i>	<i>(Insert "Printed Words" Dollar Amount)</i>
<b>Supplemental Bid No. 4: NOT APPLICABLE</b>		
ADD: \$	<input type="text"/>	<input type="text"/> Dollars
	<i>(Insert Numerical Figures)</i>	<i>(Insert "Printed Words" Dollar Amount)</i>

**2.5 Bidder's Qualification Statement and Objective Criteria for Evaluating Bidders:**

**2.5.1 All Bidders:** Download **Section 00 45 14 General Contractor Bidder's Qualification Statement** from BizNet for a template and instructions. Complete and upload **Section 00 45 14 General Contractor Bidder's Qualification Statement** to Biznet **prior** to the date and time of the Bid Opening. Information with regards to the **General Contractor's Bidder's Qualification Statement** is submitted and is made part of this **Bid Proposal Form**. Failure of a Bidder to answer any question or provide required information **shall** be grounds for the awarding authority to **disqualify** and **reject** the bid, pursuant to Connecticut General Statutes §4b-92.

**2.5.2 All Bidders** shall comply with **Section 00 45 15 Objective Criteria Established for Evaluating Qualifications of Bidders**. **Note:** Individual Specification Sections may contain General Contractor and/or Subcontractor Qualification requirements that exceed those in **Section 00 45 15 Objective Criteria Established for Evaluating Qualifications of Bidders**.

**2.6 Bidder's Prequalification Requirements for Projects Exceeding \$500,000:**

**All Bidders for Projects with estimated Construction Costs greater than \$500,000:** Upload to BizNet a current copy of your Firm's "**DAS Contractor Prequalification Certificate**" and "**Update (Bid) Statement**" for the applicable **Class of Work** on **page 1** of this **Bid Proposal Form** **prior** to the date and time of the Bid Opening. Failure to comply with this requirement **shall** cause rejection of the bid and shall not be considered a minor irregularity under **C.G.S. § 4b-95**. See **Section 00 40 15 CT DAS Prequalification Forms** for instructions on preparing and/or downloading your Firm's "**DAS Contractor Prequalification Certificate**" and "**DAS Update (Bid) Statement**".

**2.7 Named Subcontractors and Classes of Work:**  
**2.7.1 All Bidders for Projects with one or more Classes of Work checked in Table 2.7 below:** Complete Table 2.7 according to the instructions below. Failure to properly provide all of the **required information** in Table 2.7 may cause rejection of the bid.

Table 2.7: Named Subcontractors and Classes of Work:	
<input type="checkbox"/>	<b>Electrical Work: NOT APPLICABLE</b> Complete Subcontractor Name: _____ Proposed Dollar Value of Subcontract: \$ _____
<input type="checkbox"/>	<b>HVAC Work: NOT APPLICABLE</b> Complete Subcontractor Name: _____ Proposed Dollar Value of Subcontract: \$ _____
<input checked="" type="checkbox"/>	<b>Masonry Work: Enter information in blue boxes below:</b> Complete Subcontractor Name: _____ Proposed Dollar Value of Subcontract: \$ _____
<input type="checkbox"/>	<b>Plumbing Work: NOT APPLICABLE</b> Complete Subcontractor Name: _____ Proposed Dollar Value of Subcontract: \$ _____
<input type="checkbox"/>	<b>Environmental Remediation: NOT APPLICABLE</b> Complete Subcontractor Name: _____ Proposed Dollar Value of Subcontract: \$ _____
<input type="checkbox"/>	<b>Hazardous Materials Abatement: NOT APPLICABLE</b> Complete Subcontractor Name: _____ Proposed Dollar Value of Subcontract: \$ _____

- 2.7.2 Instructions For Table 2.7:**
- .1 Each **Class of Work** set forth in a separate section of the specifications pursuant to this Section shall be a **subtrade** designated in **Table 2.7** of this **Bid Proposal Form** and shall be the matter of a **subcontract**.
  - .2 When a box is checked in **Table 2.7**, the Bidder shall insert the name of the Subcontractor with the **largest** proposed Subcontract Value; this is known as the **“Named Subcontractor”**. The Bidder shall provide all of the information for each **checked Class of Work**.
  - .3 If a **Bidder** intends to use a **Subcontractor** to perform **any portion** of the Named **Classes of Work**, including circumstances where the Subcontractor is a Small Business Enterprise (SBE) or a Minority Business Enterprise (MBE), *then* it must list the Subcontractor or SBE/MBE Subcontractor as the case may be, for such Class of Work. A **Bidder** may **not** substitute itself for any of the Named Classes of Work. The Bidder **should not list itself** as the **Named Subcontractor** if it intends to use a **Subcontractor** to perform any portion of the Classes of Work listed in **Table 2.7**. The Bidder should name the Subcontractor.
  - .4 For each **Class of Work** specified in **Table 2.7**, the Bidder shall list the **Subcontractor** with the **largest Proposed Dollar Value of Subcontract** for each Class of Work as the **Named Subcontractor** and the **Proposed Dollar Value** of its Subcontract. If the Bidder intends to use **more than one** Subcontractor to perform a Class of Work, then it shall indicate the Subcontractor Name and Subcontract Value for the **largest** single Named Subcontractor.
  - .5 If a Bidder customarily performs any of the specified Classes of Work and is Prequalified by DAS for the Class of Work at the time of the Bid Opening Date if the work is greater than \$500,000, the Bidder may list **itself** as a Subcontractor together with its **price** in the space provided in **Table 2.7**. Failure to properly provide all of the **required information** in **Table 2.7** **shall** cause **rejection** of the bid.
  - .6 If the Bidder does **not** name **itself** or a **Subcontractor** for a specified Class of Work, it shall be presumed that the Bidder intends to perform with its own employees **all work** in such specified classes. The Bidder shall be required to perform with its own employees **all** of the work of the specified class. Subcontracting any portion of such specified class of work subsequently, will be considered a violation of **C.G.S. § 4b-95** and subject the Bidder to disqualification under **C.G.S. § 4b-95(e)**.
  - .7 In the event the Bidder either lists itself or is presumed to perform with its own employees all work in a specified class, no such sub-bid by a Bidder shall be considered unless the Bidder can show to the satisfaction of the awarding authority, based on objective criteria established for such purpose, that it customarily performs such subtrade work and is qualified to do the character of work required by the applicable section of the specifications.

**2.8 Set Aside Requirements:** (see Section 00 73 38 "CHRO Contract Compliance Regulations")

**2.8.1 For Projects Less Than \$500,000:** Submit a current copy of your Firm's "DAS Set-Aside Certificate" *with* your Bid Proposal Form *prior* to the date and time of the Bid Opening.

**2.8.2 For Projects Less Than \$500,000:** Upload a completed copy of the CHRO Employment Information Form, "Bidder Contract Compliance Monitoring Report" *with* your Bid Proposal Form *prior* to the date and time of the Bid Opening. The report is on the CHRO Webpage (<http://www.ct.gov/chro/cwp/view.asp?a=2525&Q=315900&chroPNavCtr=#45679>).

**2.8.3 All Bidders shall be required** to award not less than the percentage(s) stated on **page 1 of this Bid Proposal Form** to Subcontractors who are currently certified and eligible to participate under the State of Connecticut Set-Aside Program for **SBE and/or MBE** contractors, in accordance with C.G.S. § 4a-60g. **Failure** to meet these requirements **shall** cause rejection of the bid.

**2.9 Insurance Coverages:** The **limits of liability** for the Insurance required for this project shall be those listed in **Article 35 Contractors Insurance of Section 00 73 13 General Conditions**. Also see Section 00 62 16 Certificate of Insurance.

**2.9.1 Special Hazards Insurance:**

None is Required.

"X-C-U" Coverage (explosion, collapse, and underground damage) **shall be required** in accordance with **Article 35 Contractors Insurance of Section 00 73 13 General Conditions**.

**Asbestos Abatement Insurance** is required.

**2.9.2 Builders Risk Insurance:**

None is Required.

The Bidder **shall be required to maintain Builder's Risk Insurance** providing coverage for the entire Work at the project site, portions of the Work located away from the site but intended for use at the site, and portions of the Work in transit. Coverage shall be written on an All-Risk, Replacement Cost, and completed Value Form basis in an amount at least equal to the projected completed value of the Work and the policy shall state that the State of Connecticut shall be named as a loss payee not as an additional insured for these coverages.

**2.9.3 Commercial General Liability Insurance:**

**NOTE:** There is a new requirement regarding **commercial general liability (CGL) insurance:** All selected firms are required to provide an endorsement to the CGL insurance stating that the State of Connecticut is an additional insured. Please be advised that a blanket endorsement **may not** be acceptable.

**2.9.4 Owners and Contractors Protective Liability Insurance:**

The Bidder shall maintain **Owner's and Contractor's Protective Liability** insurance providing a total limit of **\$1,000,000** for all damages arising out of bodily injury or death of persons in any one accident or occurrence and for all damages arising out of injury or destruction of property in any one accident or occurrence and subject to a total (aggregate) limit of **\$2,000,000** for all damages arising out of bodily injury to or death of persons in all accidents or occurrences and out of injury to or destruction of property during the policy period. This coverage shall be for and in the name of the State of Connecticut.

**2.9.5 Umbrella Liability Insurance:**

This project requires **Umbrella Liability Insurance**. The Bidder shall provide an endorsement to the Umbrella Liability Insurance stating that the State of Connecticut is an additional insured. Select the correct **Umbrella Limit** for this **Project's Contract Value** using the "Umbrella Liability Insurance Table" below.

Umbrella Liability Insurance Table:			
Contract Value			Umbrella Limit
\$1.00	to	\$500,000.00	\$1,000,000.00
\$500,000.01	to	\$1,000,000.00	\$2,000,000.00
\$1,000,000.01	to	\$10,000,000	\$5,000,000.00
\$10,000,000.01	to	\$30,000,000	\$10,000,000.00
\$30,000,000.01	to	\$80,000,000	\$15,000,000.00
\$80,000,000.01	to	\$150,000,000	\$20,000,000.00
\$150,000,000.01	to	\$300,000,000	\$25,000,000.00



### 3.0 Bid Proposal Acknowledgements:

The Bidder *acknowledges and agrees* to the following:

#### 3.1 To Upload to BizNet Submit the Bid Proposal Form (all pages), All Other Bid Documents, Affidavits, and Certifications:

3.1.1 The Bidder acknowledges and agrees to electronically upload to DAS BizNet all pages of the **Bid Proposal Form**, and all other **Bid Documents, Affidavits, and Certifications** as directed in **Section 00 11 16 Invitation to Bid, Section 00 21 13 Instructions to Bidders**, and **Section 00 41 10 Bid Package Submittal Requirements**.

3.1.2 The State may waive minor irregularities which it considers in the best interest of the State and, when applicable, are corrected by the Bidder within seven (7) Calendar Days after the Bid Due Date. Failure to properly complete, sign and upload any of the items marked with an asterisk (\*) in **Table 1 of Section 00 41 10 Bid Package Submittal Requirements** *shall* cause rejection of the bid and *shall not* be considered a minor irregularity under **C.G.S. § 4b-95**.

3.1.3 If there are any delays in the receipt of other documents then the Bid shall remain valid for the same additional number of days. For example, if the documents are submitted four (4) Calendar Days later; then the bid shall remain valid for ninety-four (94) Calendar Days.

3.1.4 Failure to submit the documents before the stated deadline **may** result in rejection of the bid at the sole discretion of the Commissioner of Administrative Services.

#### 3.2 To Hold Bid Price:

The Bidder acknowledges and agrees to hold the **Proposed Lump Sum Base Bid** in **Subsection 2.1** of this Bid Proposal Form for **ninety (90) Calendar Days** and any extensions caused by the Bidder's delays in required submissions. The Bidder and the State may mutually agree to extend this period. The agreement to extend the **ninety (90) Calendar Day** period may occur after the expiration of the original **ninety (90) Calendar Day** period.

#### 3.3 To Use and Accept Allowances:

When applicable to this Project, the Bidder **acknowledges and agrees** to accept and use the **Allowances** as shown in **Section 01 20 00 Contract Considerations** of Division 01 General Requirements as part of the **Proposed Lump Sum Base Bid** listed in **Subsection 2.1** of this Bid Proposal Form.

#### 3.4 To Use and Accept the Following Contingent Work:

3.4.1 **Unit Prices:** When applicable to this Project, the Bidder **acknowledges and agrees** to accept and use the **Units, Add Unit Prices, and Deduct Unit Prices** as shown in **Section 01 20 00 Contract Considerations** of Division 01 General Requirements in evaluating either additions to or deductions from the Work.

3.4.2 **Supplemental Bid:** When applicable to this Project and if accepted by the Owner, the Bidder **acknowledges and agrees** to provide all labor, material and equipment to complete the Work in accordance with the **Supplemental Bid** described in **Section 01 23 13 Supplemental Bids** of Division 01 General Requirements and provided by the **Bidder** in **Subsection 2.4.2** of this Bid Proposal Form.

#### 3.5 To Use the Named Subcontractors Listed in Table 2.7:

The Bidder **agrees** that each of the **Named Subcontractors** stated in **Table 2.7** of this Bid Proposal Form will be used for the **Class of Work** indicated, for the **Proposed Total Subcontract Value dollar amount stated**, unless a **substitution** is permitted by the awarding authority as provided for in and in accordance with C.G.S. § 4b-96, as amended.

#### 3.6 To Make Good Faith Efforts to Employ MBEs:

The Bidder acknowledges and agrees to make **good faith efforts** to employ **Minority Business Enterprises (MBEs)** as **Subcontractors** and **Suppliers** of materials under such Contract.

#### 3.7 To Submit a Certified Check or Bid Bond (if required):

The Bidder acknowledges and agrees to submit a **Certified Check** or **Standard Bid Bond** *prior* to the due date and time of the Bid Opening (if required). Download **Section 00 43 16 Standard Bid Bond** from BizNet for a template and instructions.

**3.0 Bid Proposal Acknowledgements (continued):****3.8 To Accept the Current Prevailing Wage Rate Schedule:**

The U. S. Secretary of Labor's latest decision and the State of Connecticut Department of Labor (DOL) Prevailing Wage Rate Schedule are all incorporated in the documents. The higher rate (Federal or State) for any given occupation shall prevail. At the time of bidding, the Bidder agrees to accept the current Prevailing Wage Rate Schedule, as well as the annual adjustment to the prevailing wage rate that is in effect each July 1st, as provided by DOL. See **Section 00 73 44 Prevailing Wage Rates/Contractor's Wage Certification/Payroll Certification**. Annual adjustments of prevailing wage rates will *not* be considered a matter for a contract amendment with DAS/CS.

**3.9 To Comply With CHRO Requirements:**

If applicable, the Apparent Low Bidder acknowledges and agrees to provide the Commission on Human Rights and Opportunities with such information as is requested by the Commission concerning their **employment practices and procedures** as they relate to the current provisions of the Connecticut General Statutes governing Contract requirements within **fifteen (15) calendar days after** receipt of the "Request for the *Affirmative Action Plan and Employment Information Form Letter*" from the DAS/CS Office of Legal Affairs, Policy, and Procurement.

**3.10 To Ensure Executive Order No. 11246 for Equal Employment Opportunity & Non-Segregated Facilities Has Been Met:**

The Apparent Low Bidder acknowledges and agrees to ensure that Executive Order No. 11246 for Equal Employment Opportunity & Non-Segregated Facilities has been met for their firm and their Subcontractors. The Apparent Low Bidder also agrees to certify (if required) to the compliance of non-segregated facilities.

**3.11 To Obtain and Maintain Required Insurance Coverages:**

The Bidder acknowledges and agrees to obtain and maintain the required Insurance Coverages and submit the Firm's "**Certificate of Liability Insurance Acord® form**" within **ten (10) business days after** receipt of the "Letter of Intent" from the DAS/CS Office of Legal Affairs, Policy, and Procurement, as discussed in **Section 00 62 16 Certificate of Insurance** and **Article 35, "Contractors Insurance"** in **Section 00 73 13 General Conditions**.

**3.12 To Comply With Security Requirements for CT Department of Correction Facilities:**

When applicable to this Project, the Bidder acknowledges and agrees to comply with **Section 00 73 63 CT Department of Correction (CT DOC) Security Requirements** for Contract Forces on CT DOC Facilities.

**3.13 To Ensure C.G.S. § 12-430 for Non-Resident Contractors Has Been Met:**

If applicable, the Apparent Low Bidder acknowledges and agrees to provide either a copy of the "**Notice of Verified Status**" (Verification Letter) from the Connecticut Department of Revenue Services (DRS) (for **Verified Nonresident** General/Prime Contractors) or a copy of **Form AU-965 "Acceptance of Surety Bond"** from DRS (for **Unverified Nonresident** General/Prime Contractors) within **ten (10) business days after** receipt of the "Letter of Intent" from the DAS/CS Office of Legal Affairs, Policy, and Procurement which evidences that **C.G.S. § 12-430** for non-resident contractors has been met, as described in **Section 00 92 30 Procedures Regarding Taxation for Nonresident General/Prime Contractor and Subcontractors**.

**3.14 To Execute Contract:**

If selected as the Prime Contractor, the Bidder acknowledges and agrees to **execute a Contract** in accordance with the terms of this **Bid Proposal Form** and the **Contract** within **ten (10) Calendar Days** (legal State holidays excluded) **after** notification thereof by the awarding authority. See **Section 00 52 03 Contract** for a sample.

**4.0 Confidentiality of Documents:**

- 4.1** The **undersigned** agrees that if not selected as the Prime Contractor for this project, all plans and specifications in their possession for the project shall be destroyed.
- 4.2** The **undersigned** agrees that if selected as the Prime Contractor for this project:
- 4.2.1** The **plans and specifications** shall not be disseminated to anyone except for construction of this project.
- 4.2.2** The **following provision** shall be included in all of its contracts with subcontractors and sub-consultants:
- “Any and all drawings, specifications, maps, reports, records or other documents associated with the contract shall only be utilized to the extent necessary for the performance of the work and duties under this contract. Said drawings, specifications, maps, reports, records and other documents may not be released to any other entity or person except for the sole purpose of the work described in this contract. No other disclosure shall be permitted without the prior written consent of DAS Construction Services. When any such drawings, specifications, maps, reports, records or other documents are no longer needed, they shall be destroyed.”*
- 4.2.3** Upon completion of the construction and the issuance of a certificate of occupancy, the plans and specifications shall be returned to DAS Construction Services, or destroyed, or retained in a secure location and not released to anyone without first obtaining the permission of DAS Construction Services.

**5.0 Bid Proposal Declarations:**

I (we), the undersigned, hereby declare that I am (we are) the only person(s) interested in the Bid Proposal and that it is made without any connection with any other person making any Bid Proposal for the same work. No person acting for, or employed by, the State of Connecticut is directly or indirectly interested in this Bid Proposal, or in any Contract which may be made under it, or in expected profits to arise therefrom. This Bid Proposal is made without directly or indirectly influencing or attempting to influence any other person or corporation to bid or refrain from bidding or to influence the amount of the Bid Proposal of any other person or corporation. This Bid Proposal is made in good faith without collusion or connection with any other person bidding for the same work and this proposal is made with distinct reference and relation to the plans and specifications prepared for this Contract. I (we) further declare that in regard to the conditions affecting the Work to be done and the labor and materials needed, this Bid Proposal is based solely on my (our) own investigation and research and not in reliance upon any representations of any employee, officer or agent of the State.

**6.0 Duly Authorized Signature:**

**Type of Business:** *(Check Applicable Box)*

<input type="checkbox"/> <b>Limited Liability Corporation (LLC)</b>  <input type="checkbox"/> <b>Partnership</b>  <input type="checkbox"/> <b>Sole Proprietor</b>  <input type="checkbox"/> <b>Doing Business As (d/b/a)</b> <i>(If d/b/a box is checked provide complete name below)</i> <input style="width: 100%;" type="text"/> <i>(Doing Business As Name)</i>	<input type="checkbox"/> <b>Corporation</b> <i>(If Checked, Provide Corporate Seal Below)</i>  <div style="border: 1px solid black; width: 100px; height: 100px; margin: 0 auto;"></div> <i>(Provide <u>exact</u> corporate name from corporate seal below)</i> <input style="width: 100%;" type="text"/> <i>(Name On Corporate Seal)</i>
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<b>Signed:</b>	<input style="width: 90%;" type="text"/> <i>(Month)</i>	<input style="width: 90%;" type="text"/> <i>(Day)</i>	<input style="width: 90%;" type="text"/> <i>(Year)</i>
<b>Bidder's Signature:</b>	<input style="width: 100%;" type="text"/> <i>(Duly Authorized)</i>		<input style="width: 100%;" type="text"/> <i>(Title)</i>
	<input style="width: 100%;" type="text"/> <i>(Print Named)</i>		<input style="width: 100%;" type="text"/> <i>(Date)</i>



## Bid Package Submittal Requirements:

**DAS | Construction Services | Office of Legal Affairs, Policy, and Procurement**  
**450 Columbus Boulevard, Suite 1302 | Hartford, CT 06103**

<b>1.1</b>	<b>On-Line Bidding:</b>
1.1.1	All Bidders shall <b>electronically</b> upload their <b>Bid Package Documents</b> to BizNet following the <b>instructions</b> in the DAS/CS publication, <a href="#">6001 Construction On-line Bidding Instructions</a> , available for download here: Go to the DAS Homepage ( <a href="http://www.ct.gov/DAS">www.ct.gov/DAS</a> ) > Doing Business With The State > State Building Construction > Publications and Forms > DAS Construction Services Library > 6000 Series > <b>6001 Construction On Line Bidding Instructions</b> .
1.1.2	For questions, call 860-713-5794.

<b>1.2</b>	<b>Bid Package Submittal Requirements:</b>
All Bidders are required to <b>electronically upload Bid Package Documents</b> to BizNet <b>prior</b> to the date and time of the Bid Opening. Additional documents must be either <b>electronically uploaded</b> to BizNet <b>or</b> submitted as <b>paper copies</b> to the <b>appropriate Agency</b> . See Tables 1, 2, and 3 for specific submittal requirements.	
1.2.1	<b>All Bidders:</b> See Table 1. <b>All Documents in Table 1 <u>must be electronically uploaded to BizNet.</u></b>
1.2.2	<b>Three (3) Apparent Lowest Bidders:</b> See Table 2.
1.2.3	<b>Apparent Low Bidder:</b> See Table 3.

<b>1.3</b>	<b>Deadlines for Receipt of Bid Package Documents:</b>
1.3.1	<b>Table 1:</b> Bid Package Documents must be uploaded to BizNet <b>prior</b> to the date and time of the Bid Opening. The State may waive minor irregularities that otherwise may cause rejection of a Bid only when waiving such minor irregularities is in the best interests of the State and the minor irregularities have been corrected by the Bidder within seven (7) Calendar Days after the Bid Due Date. Failure to properly <u>complete, sign and upload</u> to BizNet any of the items <b>marked with an asterisk (*)</b> in <b>Table 1 prior</b> to the date and time of the Bid Opening <b>shall cause rejection</b> of the bid and shall <b>not</b> be considered a minor irregularity under <b>Connecticut General Statutes (C.G.S.) § 4b-95</b> .
1.3.2	<b>Tables 2 and 3:</b> See the tables for additional deadlines. Failure to submit the documents before the stated deadlines <b>may</b> result in rejection of the bid at the sole discretion of the Commissioner of Administrative Services.

<b>1.4</b>	<b>Delays in Receipt of Supportive Documents from the Three Apparent Lowest Bidders:</b>		
1.4.1	If there are any delays in the receipt of the supportive documents specified in Tables 2 and 3, then the Bids shall remain valid for the same additional number of days. <table border="0" style="margin-left: 20px;"> <tr> <td style="width: 20px;">.1</td> <td>For example, since the <b>Three (3) Apparent Lowest Bidders</b> are required to <b>Hold The Bid Price</b> for <b>ninety (90) calendar days</b>, if supportive documents are submitted <b>four (4) calendar days later</b>, then the bid shall remain valid for <b>ninety-four (94) calendar days</b>.</td> </tr> </table>	.1	For example, since the <b>Three (3) Apparent Lowest Bidders</b> are required to <b>Hold The Bid Price</b> for <b>ninety (90) calendar days</b> , if supportive documents are submitted <b>four (4) calendar days later</b> , then the bid shall remain valid for <b>ninety-four (94) calendar days</b> .
.1	For example, since the <b>Three (3) Apparent Lowest Bidders</b> are required to <b>Hold The Bid Price</b> for <b>ninety (90) calendar days</b> , if supportive documents are submitted <b>four (4) calendar days later</b> , then the bid shall remain valid for <b>ninety-four (94) calendar days</b> .		
1.4.2	Failure to submit the documents before the stated deadline <b>may</b> result in rejection of the bid at the sole discretion of the Commissioner of Administrative Services.		

TABLE 1 ALL BIDDERS			
Construction Costs:		The Bid Proposal Form, Other Bid Package Documents, Affidavits, and Certifications <u>shall</u> be electronically uploaded to BizNet by <u>all</u> Bidders prior to the Date and Time of the Bid Opening.	Form Location
Less Than \$500,000	Greater Than \$500,000		
Bid Proposal Form and Other Bid Package Documents			
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	* Section 00 41 00 Bid Proposal Form	BizNet
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	* Section 00 43 16 Standard Bid Bond or Certified Check	BizNet
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	* Section 00 45 14 General Contractor Bidder's Qualification Statement	BizNet
	<input checked="" type="checkbox"/>	* DAS Prequalification Certificate	BizNet
	<input checked="" type="checkbox"/>	* DAS Update (Bid) Statement	BizNet
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Section 00 40 14 Certificate (of authority)	BizNet
<input checked="" type="checkbox"/>		DAS Set-Aside Certificate	BizNet
<input checked="" type="checkbox"/>		Bidder Contract Compliance Monitoring Report	CHRO Website
Affidavits and Certifications			
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	* Gift and Campaign Contribution Certification – OPM Ethics Form 1	BizNet
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	* Consulting Agreement Affidavit – OPM Ethics Form 5	BizNet
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	* Ethics Affidavit (Regarding State Ethics) – OPM Ethics Form 6	BizNet
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	* Iran Certification – OPM Ethics Form 7	BizNet
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Nondiscrimination Certification – Form A, B, C, D, or E	BizNet

**\* NOTE:** The State may waive minor irregularities that otherwise may cause rejection of a Bid only when waiving such minor irregularities is in the best interests of the State and the minor irregularities have been corrected by the Bidder within seven (7) Calendar Days after the Bid Due Date. Failure to properly complete, sign and upload to BizNet any of the items marked with an **asterisk (\*)** in **Table 1** prior to the date and time of the Bid Opening **shall** cause rejection of the bid and shall **not** be considered a minor irregularity under C.G.S. § 4b-95.

TABLE 2 THREE (3) APPARENT LOWEST BIDDERS			
Construction Costs:		WHEN APPLICABLE:	Form Location
Less Than \$500,000	Greater Than \$500,000	Submit within <b>ten (10) Calendar Days</b> <i>after</i> receipt of the “ <b>Set-Aside Contractor Schedule Request</b> ” from the DAS/CS Procurement Unit:	
	<input checked="" type="checkbox"/>	<b>Set-Aside Contractor Schedule</b> for each subcontracted SBE and/or MBE firm(s) (See Section 00 73 27 Set-Aside Contractor Schedule for a sample Request.)	<b>Email From DAS/CS Procurement Unit</b>
	<input checked="" type="checkbox"/>	<b>DAS Set-Aside Certificate(s)</b> for each subcontracted SBE and/or MBE firm(s) listed in the Set-Aside Contractor Schedule.	<b>Download from BizNet</b>
	<input checked="" type="checkbox"/>	<b>Section 00 45 17 Named Subcontractor Bidder’s Qualification Statements</b> for each Named Subcontractor listed in the Bid Proposal Form.	<b>Copy from Project Manual</b>
	<input checked="" type="checkbox"/>	<b>DAS Prequalification Certificate(s) and Update (Bid) Statement(s)</b> for each Named Subcontractor listed in the Bid Proposal Form <b>with Subcontracts greater than \$500,000.</b>	<b>Download from BizNet</b>

TABLE 3 APPARENT LOW BIDDER			
Construction Costs:		When Applicable, submit the following documents as noted:	Form Location
Less Than \$500,000	Greater Than \$500,000		
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<b>If Contractor has 50 or more employees and/or the Project is equal to or greater than \$500,000, submit to CHRO:</b> Affirmative Action Plan and Employment Information Form (DAS-45).	<b>CHRO Website &amp; BizNet</b>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<b>Submit to DAS/CS Procurement Unit:</b> Copy of Transmittal Letter to confirm the Affirmative Action Plan was filed with CHRO.	<b>(copy of transmittal letter)</b>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<b>Submit to CT Department of Labor:</b> Contractors Wage Certification Form. See Section 00 73 44 Prevailing Wage Rates/Contractor’s Wage Certification/Payroll Certification.	<b>Copy from Project Manual</b>

Submit within <b>fifteen (15) calendar days</b> <i>after</i> receipt of the “ <b>Request for the Affirmative Action Plan and Employment Information Form Letter</b> ” from the DAS/CS Procurement Unit:			
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<b>If Contractor has 50 or more employees and/or the Project is equal to or greater than \$500,000, submit to CHRO:</b> Affirmative Action Plan and Employment Information Form (DAS-45).	<b>CHRO Website &amp; BizNet</b>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<b>Submit to DAS/CS Procurement Unit:</b> Copy of Transmittal Letter to confirm the Affirmative Action Plan was filed with CHRO.	<b>(copy of transmittal letter)</b>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<b>Submit to CT Department of Labor:</b> Contractors Wage Certification Form. See Section 00 73 44 Prevailing Wage Rates/Contractor’s Wage Certification/Payroll Certification.	<b>Copy from Project Manual</b>

TABLE 3 APPARENT LOW BIDDER (continued)			
Construction Costs:		Submit within <b>ten (10) business days</b> <i>after</i> receipt of the “Letter of Intent” from the DAS/CS Procurement Unit:	Form Location
Less Than \$500,000	Greater Than \$500,000		
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<b>Section 00 40 14 Certificate (of authority)</b>	Email From DAS/CS Procurement Unit
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<b>Section 00 52 03 Contract</b>	Email From DAS/CS Procurement Unit
	<input checked="" type="checkbox"/>	<b>Section 00 52 73 Subcontract Agreement Form (Named &amp; Listed)</b>	Email From DAS/CS Procurement Unit
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<b>Certificate of Liability Insurance Acord® form</b> (See Section 00 62 16 Insurance Certificate Form for details)	Email From DAS/CS Procurement Unit
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<b>Certificate of Asbestos Abatement Liability Insurance</b> (for asbestos abatement only; see Section 00 62 16.1 Asbestos Abatement Liability Insurance for details)	Email From DAS/CS Procurement Unit
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<b>Section 00 92 10: Additional Forms</b>	<b>Performance Bond</b>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<b>Labor &amp; Material Bond</b>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<b>Surety Sheet</b>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<b>Bidder’s Certification: Financial Position &amp; Corporate Structure</b>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<b>Power of Attorney from the Surety Company</b>	Surety Company
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<b>Nonresident (Out of State) Contractors:</b> <u>Verified Nonresident</u> General/Prime Contractors must submit a copy of their “ <b>Notice of Verified Status</b> ” (Verification Letter) from the CT Department of Revenue Services (DRS). <u>Unverified Nonresident</u> General/Prime Contractors must submit a copy of <b>Form AU-965 “Acceptance of Surety Bond”</b> from the DRS. (See Section 00 92 30 Procedures Regarding Taxation for Nonresident General/Prime Contractor and Subcontractors for additional details.)	CT Department of Revenue Services
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<b>NEW: General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities:</b> For projects disturbing <b>one or more total acres of land area</b> , submit a copy of the signed <b>Stormwater Pollution Control Plan “Contractor Certification Statement”</b> and <b>License Transfer Form</b> , as directed by the DAS/CS Architect/Engineer, prior to commencement of any construction activities.	DAS/CS Architect/Engineer
	<input checked="" type="checkbox"/>	<b>Ethics Affidavit (Regarding State Ethics) OPM Ethics Form 6</b> for each Named Subcontractor	BizNet
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<b>Threshold Projects Only: Submit Major Contractor Registration License Number(s)</b> for Subcontractors	CT Department of Consumer Protection
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<b>SEEC Form 10</b>	SEEC Website
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<b>Certificate of Legal Existence from Corporations</b>	Secretary of the State
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<b>NEW: Contractor and Subcontractor Payments Reporting:</b> Every Contractor (and its Subcontractors) shall log on to BizNet <b>each month</b> and <b>enter payments</b> they have received from the state, from the Contractor, or from a higher tier Subcontractor (as applicable).	BizNet

End of Section  
 00 41 10 Bid Package Submittal Requirements



**INSTRUCTIONS FOR CERTIFIED CHECK OR BID BOND (select one):**

**All Bidders:**

**Edit this page, print, sign, and scan to PDF. Upload the PDF form to BizNet.**

- CERTIFIED CHECK OPTION:** *Prior* to the Date and Time of the Bid Opening:  
(1) Check the box for "Certified Check Option";  
(2) Print, scan to PDF, and upload the PDF form to Biznet; and  
(3) Deliver the Certified Check, made payable to "Treasurer, State of Connecticut", to the following address:  
State of Connecticut  
Department of Administrative Services, Construction Services  
Office of Legal Affairs, Policy, and Procurement  
450 Columbus Boulevard, North Tower, Suite 1302  
Hartford, CT 06103-1835
- BID BOND OPTION** (see template below): *Prior* to the Date and Time of the Bid Opening:  
(1) Check the box for "Bid Bond Option";  
(2) Complete the **Standard Bid Bond** (below), print, sign, scan to PDF, and upload the PDF Bid Bond to Biznet.

**Standard Bid Bond**

**DAS | Construction Services | Office of Legal Affairs, Policy, and Procurement**

KNOW ALL MEN BY THESE PRESENTS, That we, \_\_\_\_\_  
\_\_\_\_\_, hereinafter called the Principal,  
of \_\_\_\_\_, as Principal,  
and \_\_\_\_\_, hereinafter  
called the Surety, a corporation organized and existing under the laws of the  
State of \_\_\_\_\_, and duly authorized to transact a  
surety business in the State of Connecticut, as Surety, are held and firmly bound unto the State of  
Connecticut, as Obligee, in the penal sum of ten (10) percent of the amount of the bid set forth in a  
proposal hereinafter mentioned, \_\_\_\_\_  
\_\_\_\_\_,  
lawful money of the United States of America, for the payment of which, well and truly to be made to the Obligee,  
the Principal and the Surety bind themselves, their heirs, executors, administrators, successors and assigns,  
jointly and severally, firmly by these presents.  
THE CONDITION OF THIS OBLIGATION IS SUCH, That, whereas the Principal has submitted  
or is about to submit a proposal to the Obligee related to a contract for Project No.: \_\_\_\_\_  
NOW, THEREFORE, if the said contract be awarded to the Principal and the Principal shall, within such time as  
may be specified, enter into the said contract in writing with the State of Connecticut and give the required  
bonds, with surety acceptable to the Obligee, or if the Principal shall fail to do so, pay to the Obligee the  
damages which the Obligee may suffer by reason of such failure not exceeding the penalty of this bond, then  
this obligation shall be void, otherwise to remain in full force and effect.

SIGNED, SEALED AND DELIVERED this \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_\_

_____ (Principal's Signature)	_____
_____	Surety
_____	by _____
(Print Name)	Its attorney in fact Signature
_____	_____
Company Name	(Print Name)



## General Contractor Bidder's Qualification Statement

DAS | Construction Services | Office of Legal Affairs, Policy, and Procurement

**Instructions:**

- All Bidders are **required** to **upload this form to BizNet**, properly completed, **prior to the date and time of the Bid Opening**.
- Failure of a Bidder to answer any question or provide required information **shall** be grounds for the awarding authority to disqualify and reject the bid, pursuant to Connecticut General Statutes §4b-92.
- If a question or request for information does not pertain to your organization in any way, use the symbol "NA" (Not Applicable).
- Attach additional information on 8 ½" x 11" sheets with your letterhead as necessary and reference specific section and subsection numbers.
- **NOTE:** The Department reserves the right to request any additional or supplemental information necessary to complete its evaluation of a Bidder's qualification.

**1.0 Project Information:**

1.1 DAS/CS Project Number:

1.2 Project Name:

1.3 Project Location:

**2.0 Projects with Construction Costs Estimated To Be Greater than \$500,000:**

- Select the applicable **Class of Work** as stated in the **00 11 16 Invitation to Bid**.
- Select **YES** if your Firm has the applicable the **DAS Prequalification Certificate and Update (Bid) Statement** or **NO** if it does not.
- If **YES**, upload the applicable **DAS Prequalification Certificate and Update (Bid) Statement** to BizNet **prior** to the date and time of the Bid Opening.

**Not Applicable - Construction Costs Less than \$500,000**

Class of Work:

Does your Firm have the applicable  
DAS Prequalification Certificate and  
Update (Bid) Statement?

2.1  **General Building Construction (Group A):**

YES  NO

2.2  **General Building Construction (Group B):**

YES  NO

2.3  **General Building Construction (Group C):**

YES  NO

2.4  **General Trades (Interior Work Only):**

YES  NO

2.5  **CPS Projects ONLY: Insert Class of Work**

YES  NO

**3.0 Firm's Present Legal Name:** (the *complete legal name exactly* as it appears with the **Secretary of State registry**. The appropriate **title** must be used throughout the documents, for example: General Partner, Member, Manager, Sole Member, etc.)

**Name:**

**4.0** How many years has your Firm been in business under its **Present Legal Name**?

**Years:**

**5.0** How many years has your Firm been in business as a General Contractor?

**Years:**

**6.0** Indicate **all** other **names** by which your Firm has been known and the **length of time** known by each name:

**6.1**

Years	Months

**6.2**

Years	Months

**6.3**

Years	Months

**7.0** This Firm's **Certification** with the CT Secretary of State:

**Check Box**

**Type of Business Entity:**

**Certification Year**

**Corporation**



**Partnership**



**Sole Proprietorship**



**Limited Liability Company (LLC)**



**Other:**



**8.0** Attach resumes of all **supervisory personnel**, such as **Principals, Project Managers, and Superintendents**, who will be directly involved with the project on which you are now a bidder. Indicate their construction related training, certifications and licenses and the number of years of actual construction experience. Indicate the number of years of this actual construction experience which were in a Supervisory capacity.

**9.0 Named Subcontractor – Bidder Intends to Self-Perform:**

Check **YES** or **NO** for each “Named Subcontractor” **Class of Work** which your firm intends to perform with its own employees for this Contract; see **Section 2.7** of **Section 00 41 00 Bid Proposal Form**.

**NOTE:** For Projects with Construction Costs estimated to be greater than \$500,000, complete **Section 00 45 17 Named Subcontractor Bidder's Qualification Statement** for each **Named Subcontractor Class of Work** checked **YES** and submit within ten (10) calendar days *after* receipt of the “Set-Aside Contractor Schedule Request” from DAS/CS Office of Legal Affairs, Policy, and Procurement.

<input type="checkbox"/>	<b>Not Applicable – No Named Subcontractors &amp;/or Not Self-Performing</b>	
	<b>Named Subcontractor Class of Work</b>	<b>Does your Firm intend to self-perform this Named Subcontractor Class of Work?</b>
9.1	Electrical:	YES <input type="checkbox"/> NO <input type="checkbox"/>
9.2	HVAC:	YES <input type="checkbox"/> NO <input type="checkbox"/>
9.3	Masonry:	YES <input type="checkbox"/> NO <input type="checkbox"/>
9.4	Plumbing:	YES <input type="checkbox"/> NO <input type="checkbox"/>
9.5	Environmental Remediation:	YES <input type="checkbox"/> NO <input type="checkbox"/>
9.6	Hazardous Materials Abatement:	YES <input type="checkbox"/> NO <input type="checkbox"/>

**10.0 Named Subcontractor - Class of Work Greater than \$500,000 and Self-Performing:**

- Select the applicable **Named Subcontractor Class of Work** which your firm intends to perform with its own employees for this Contract.
- Select **YES** if your Firm has the applicable the **DAS Prequalification Certificate and Update (Bid) Statement** or **NO** if it does not.
- If **YES**, submit the applicable **DAS Prequalification Certificate and Update (Bid) Statement** within ten (10) calendar days *after* receipt of the “Set-Aside Contractor Schedule Request” from DAS/CS Office of Legal Affairs, Policy, and Procurement.

<input type="checkbox"/>	<b>Not Applicable – No Class of Work Greater \$500,000 &amp;/or Not Self-Performing</b>	
	<b>Named Subcontractor Class of Work Greater Than \$500,000</b>	<b>Does your Firm have the applicable DAS Prequalification Certificate and Update (Bid) Statement?</b>
10.1	<input type="checkbox"/> Electrical:	YES <input type="checkbox"/> NO <input type="checkbox"/>
10.2	<input type="checkbox"/> HVAC:	YES <input type="checkbox"/> NO <input type="checkbox"/>
10.3	<input type="checkbox"/> Masonry:	YES <input type="checkbox"/> NO <input type="checkbox"/>
10.4	<input type="checkbox"/> Plumbing:	YES <input type="checkbox"/> NO <input type="checkbox"/>

**11.0 List all** construction projects your Firm has completed in the **past five (5) years**. Provide **all** of the information listed below. DAS/CS *may* reject a bid as **non-responsive** if the bidder does not make **all** required pre-award submittals within the designated time period. Attach additional sheets as necessary **using the following format**:

**IMPORTANT NOTE: Two (2)** of the construction projects completed in the past five (5) years shall be (1) single project contracts that have reached substantial completion, not aggregate projects; (2) of commercial and/or institutional construction work (this includes compliance with general requirements); (3) within the Cost Estimate Range stated in Section 00 11 16 Invitation to Bid for this project; and (4) of the size and complexity of this Project. Failure to identify to **two** such projects **shall** result in rejection of the bid.

<b>11.1 Project Title:</b>		
<b>11.2 Project Location:</b>		
<b>11.3 Construction Start Date:</b>		
<b>11.4 Construction Finish Date:</b>		
<b>11.5 Describe the Scope of Work your Firm performed:</b>		
<b>11.6 Original Contract Amount:</b>		
<b>11.7 Final Contract Amount:</b>		
<b>11.8 Original Contract Duration (Calendar Days):</b>		
<b>11.9 Final Contract Duration (Calendar Days):</b>		
<b>11.10 Owner:</b>		
<b>11.11 Owner's Representative:</b>		
	<i>(Name)</i>	<i>(Phone Number)</i>
<b>11.12 Design Firm:</b>		
<b>11.13 Design Firm's Representative:</b>		
	<i>(Name)</i>	<i>(Phone Number)</i>

**12.0 References:**

Furnish references from **architects, engineers or owners** indicating that your Firm has satisfactorily completed in a timely manner contract work for projects within the cost estimate range, size and complexity of this project. Provide explanations where delays have occurred. This information should cover work done over the past five years.

**13.0 Construction Scheduler:**

**For Projects greater than \$5 Million:** Submit the **name, resume and references** of the **Construction Scheduler** in accordance with the requirements called for in Section **01 32 16.13 Critical Path Method Schedules** of the General Requirements.

Not Applicable – Project Less Than \$5 Million

**14.0** List and explain if your Firm has ever failed to complete a contract or if any officer or partner of your Firm has ever been an officer or partner of another organization that failed to complete a contract. Indicate below the circumstances leading to the project failure and the name of the company which provided the bonding for the failed contract(s):

Not Applicable

**15.0** List and explain if your Firm has ever had a contract terminated, indicating the circumstances leading to the project termination of contract(s):

Not Applicable

**16.0** List and explain all legal or administrative proceedings against your Firm or any officers, principals, partners, members, or employees of the organization currently pending or concluded adversely within the last five years, and any judicial or administrative sanctions that are still in effect against such organization, and any of its officers, principals, partners, members, or employees. (Exclude Occupational Safety and Health Act [OSHA] violations which are called for elsewhere in this statement). Add attachments as necessary.

Not Applicable

**17.0** List and explain any disbarments or suspensions that have been imposed on your Firm in the past five years or that were still in effect during the five year period or that are still in effect. Such list must include disbarments and suspensions of officers, principals, partners, members, and employees of your Firm:

Not Applicable

**18.0** List and explain any other reason(s) that precludes your Firm or any officer, principal, partner, member, or employees thereof from bidding on a contract in Connecticut or any other jurisdiction:

Not Applicable

**19.0** List and explain all willful or serious violations your Firm has had of any OSHA or of any standard, order or regulation promulgated pursuant to such act, during the three year period preceding the bid, provided such violations were cited in accordance with the provisions of any State Occupational Safety and Health Act or Occupational Safety and Health Act of 1970. Indicate whether these were abated within the time fixed by the citation or whether the citation was appealed. If appealed what is the status or disposition. Add attachments as necessary.

Not Applicable

**20.0** List and explain any criminal convictions your Firm has had related to the injury or death of any employee in the three-year period preceding the bid: Add attachments as necessary.

Not Applicable

**21.0** List and explain any changes in your Firm's financial condition or business organization, which might affect your Firm's ability to successfully complete this contract:

Not Applicable

**22.0** **NEW:** List and explain if your Firm has ever failed to submit an Affirmative Action Plan to the Commission on Human Rights and Opportunities (CHRO). Indicate below the circumstances leading to the failure to submit the Affirmative Action Plan to CHRO:

Not Applicable

**23.0** **NEW:** List and explain if your Firm's Affirmative Action Plan has ever been disapproved by CHRO or determined to be noncompliant. Indicate below the circumstances leading to the disapproval or finding of noncompliance of your Affirmative Action Plan by CHRO:

Not Applicable



### 24. Signature

Dated at

Signed this

 day of , 20 

Name of Firm:

Firm Address:

Signature:

Print or Type Name:

Title:

### 25. Notary Statement

Mr./Mrs./Ms.  being duly sworn

deposes and says that he/she is the  of  
*(Position or Title)*

, and that the answers to the foregoing  
*(Firm Name)*

questions and all statements therein contained are true and correct.

Subscribed and sworn before me this  day of , 20

Notary Public

My Commission Expires , 20

End of Section

00 45 14 General Contractor Bidder's Qualification Statement



## Objective Criteria Established for Evaluating Qualifications of Bidders:

CT DAS | Construction Services | Office of Legal Affairs, Policy, and Procurement

The following items are established pursuant to Sections 4b-92, 4b-94 and 4b-95a of the Connecticut General Statutes (C.G.S.) as amended.

The **Objective Criteria Established for Evaluating Qualifications of Bidders** (Section 00 45 15) are to assure that the State of Connecticut will secure the "lowest responsible and qualified bidder" who has the ability and capacity to successfully complete the Bid Proposal Form and the Work. Failure to comply with any portion of this requirement **may** cause **rejection** of the bid. **Note:** Individual Specification Sections **may** contain General Contractor and/or Subcontractor Qualification requirements that **exceed** those in **Section 00 45 15 Objective Criteria Established for Evaluating Qualifications of Bidders**.

**THE BIDDER MUST HAVE OR HAVE COMPLETED THE FOLLOWING:**

### 1.1 DAS Prequalification Requirements:

For Projects with Construction Costs greater than \$500,000, **all Bidders** shall upload to BizNet a valid Department of Administrative Services (DAS) **Prequalification Certificate** and **Update (Bid) Statement** *prior* to the date and time of the Bid Opening.

### 1.2 Evaluation:

1.2.1 **All Bidders** shall upload to BizNet **Section 00 45 14 General Contractor's Bidder Qualifications Statement** *prior* to the date and time of the Bid Opening.

1.2.2 If applicable, the **Three (3) Lowest Bidders** shall submit **Section 00 45 17 Named Subcontractor's Bidder Qualification Statement(s)** to DAS Construction Services (DAS/CS) Office of Legal Affairs, Policy, and Procurement within **ten (10)** calendar days **after** receipt of the "Set-Aside Contractor Schedule Request" *from* DAS/CS.

1.2.3 The Bidder must demonstrate that the Bidder and, if applicable, its Named Subcontractors, meet the **objective criteria** for this specific project.

1.2.4 The **responses** to the Statement(s) must identify two (2) **projects completed** – single project contracts that have reached substantial completion, not aggregate projects – of commercial and/or institutional construction work (this includes compliance with general requirements) during the past five (5) years within the Cost Estimate Range stated in Section 00 11 16 **Invitation to Bid** for this project, and of the size and complexity of this project. The failure to identify to such projects shall result in rejection of the bid.

1.2.5 If the Bidder identifies two projects that meet the above criteria, the **State's evaluation** shall be based on the **performance record** of the prospective Bidder as a general, prime contractor and its named subcontractors during the course of the two (2) comparable projects, and not just the end result. The state will conduct the evaluation based on its interpretation of its objective criteria. **Evaluation criteria** shall include: Faithful and efficient performance; fulfilment of contract obligations; financial, managerial and technical abilities; and integrity and the absence of any conflicts of interest. Any one or all of the factors noted in this paragraph as well as in the other criteria set forth in this **Section 00 45 15** may be grounds for the determination by the State, in its sole discretion, of the Bidder's responsibility and qualifications necessary for the faithful performance of the work required of this project.

### 1.3 References:

Furnished **references from architects, engineers or owners** indicating that it has satisfactorily completed in a timely manner contract work for projects and provide explanations where delays have occurred. This information should cover work done over the **past five years**. Review of DAS/CS projects shall be included in the evaluation of the bidder's qualifications and anticipated future performance.

<b>1.4</b>	<b>Qualified Personnel:</b>
1.4.1	Shown that it customarily employs or has on its payroll <b>supervisory personnel, qualified</b> to perform the work required for this project and to coordinate the work called for in the Bid Specifications.
1.4.2	If the project is for \$5 Million or more, submit the <b>name, resume and references</b> of the <b>Construction Scheduler</b> in accordance with the requirements called for in <b>Section 01 32 16.13 Critical Path Method Schedules</b> of the General Requirements.
<b>1.5</b>	<b>Past Performance:</b>
	Demonstrated a good track record of <b>past performance</b> on State or other projects relative to quantity, quality, timeliness, cost, cooperation and harmonious working relationships with subcontractors, suppliers and client agencies. DAS/CS will review the Bidders past performance ratings prepared by DAS/CS or prepared as part of the DAS Contractor Prequalification Program. This review may focus on the comments relative to: Quality of Supervision, Adherence to Contract Documents, On Time Project Completion, Subcontractor performance, and the handling of Change Orders. Unacceptable ratings for several criteria shall be sufficient cause to deem a bidder not responsible.
<b>1.6</b>	<b>Financial Responsibility:</b>
	Shown that it is <b>financially responsible</b> to perform the work as bid. If requested, additional financial information shall be provided. Prompt and proper payments to its subcontractors and material suppliers is a critical factor to be considered by DAS/CS.
<b>1.7</b>	[Left Blank]
<b>1.8</b>	<b>Equipment Requirements:</b>
	Shown that it owns or possesses, rented, or leased <b>equipment</b> of the type customarily required by contractors in the performance of contract work and that such equipment, if needed, is available for this project.
<b>1.9</b>	<b>Materials and Suppliers:</b>
	Purchased <b>materials</b> over the past three years from suppliers who customarily sell such materials in quantity to contractors.
<b>1.10</b>	<b>Physical Facilities:</b>
	Control of adequate <b>physical facilities</b> from which the work can be performed.
<b>1.11</b>	<b>Compliance with Subcontractor Requirements:</b>
	Demonstrated that on <b>previous state projects</b> the bidder complied in good faith with the requirements of listing subcontractors as outlined in C.G.S. Sections 4b-93 and 4b-95.
<b>1.12</b>	<b>Threshold Building and Major Contractor Requirements:</b>
	Demonstrated that <b>all major subcontractors</b> are in compliance with the provisions of C.G.S. Section 20-341gg, as revised, concerning licensure requirements to perform work on any structure that exceeds the threshold limits contained in C.G.S. Section 29-276b, as revised.
<b>1.13</b>	<b>OSHA Requirements:</b>
	Proven that the Bidder has not been found to be in violation of three or more willful or serious violations of Occupational Safety and Health Administration (OSHA) regulations in the past three years.

**1.14 Criminal Convictions and Injuries or Death of Employees:**

Not received a **criminal conviction** related to the injury or death of any employee in the three-year period preceding the bid.

**1.15 Legal or Administrative Proceedings:**

Listed all **legal** (court and/or arbitration) or **administrative proceedings** currently pending as well as any legal (court and/or arbitration) or administrative proceeding related to procurement or performance of any public or private construction contracts which has concluded adversely within the last three years.

**1.16 Contract Performance and Surety:**

Identified any situations where: (1) the bidder failed to complete a construction contract; or (2) bonds were called during the past three years. If applicable, attach a sheet providing explanation including date(s) and location(s).

**1.17 State Tax Requirements:**

Not been found to be in violation of any **state tax** requirements of the Connecticut Department of Revenue Services in the five (5)-year period preceding the bid.

**1.18 State and Federal Labor Requirements:**

Not been found to be in violation of any State or Federal **labor laws** as required through the Department of Labor including violations of prevailing wage laws in the five (5)-year period preceding the bid.

**1.19 Change Order Pricing and State Ethics:**

Been found to be in compliance with all statutory and regulatory requirements. This Item shall include, but not be limited to, any DAS/CS determinations related to improper Change Order pricing relative to C.G.S. Section 1-101nn of The State Ethics Statutes.

**1.20 Internal Revenue Services (IRS) Requirements:**

Not been found in violation of any of the **Internal Revenue Service Tax Requirements** regarding classification of employees and independent contractors in the five (5)-year period preceding the bid.

**1.21 Workers Compensation and Insurance Requirements:**

Not been found to be in any violation of C.G.S. Section 31-288 relating to employee classification for purposes of Workers' Compensation insurance premiums in the five (5)-year period preceding the bid.

**NOTE:** The foregoing Item Numbers **1.13** and **1.14** are meant to comport with C.G.S. Section 31-57b.

**00 45 15 Objective Criteria Established for Evaluating Qualifications of Bidders**



## Named Subcontractor Bidder's Qualification Statement

DAS | Construction Services | Office of Legal Affairs, Policy, and Procurement

**Instructions:**

- This Section is **only applicable** to Projects with Construction Costs **Greater than \$500,000.00**. See **Subsection 2.7 Named Subcontractors and Classes of Work** of **00 41 00 Bid Proposal Form** for applicability.
- If a question or request for information does not pertain to your organization in any way, use the symbol "NA" (Not Applicable). Attach additional information on 8 ½" x 11" sheets with your letterhead as necessary and reference specific subsection number.
- Submit this form for **each** of the Named Subcontractors, within **ten (10)** calendar days **after** receipt of the "Set-Aside Contractor Schedule Request" to:

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

**1.0 Project Information:**

1.1 DAS/CS Project Number:

1.2 Project Name:

1.3 Project Location:

**2.0 Named Subcontractor Class of Work:**

Check the applicable Class of Work:

2.1 Electrical Work:

2.2 HVAC Work:

2.3 Masonry Work:

2.4 Plumbing Work:

2.5 Environmental Remediation:

2.6 Hazardous Materials Abatement:

**3.0 Subcontractor's Present Legal Name:**

Name:

**4.0** How many years has the **Subcontractor** been in business under its **Present Legal Name**?

Years:

**5.0** How many years has the **Subcontractor** been in business as a Subcontractor for this Class of Work?

Years:

**6.0** If the **Subcontractor** has not always been a Subcontractor for this Class of Work then list the trade(s) that your firm customarily performed prior to the time that you became a Subcontractor in this **Class of Work**:

**6.1**

**6.2**

**6.3**

**7.0** Indicate **all other names** by which this **Subcontractor** has been known and the **length of time** known by each name:

<b>7.1</b>	<input style="width: 95%; height: 40px;" type="text"/>	<input style="width: 40px; height: 25px;" type="text"/>	<input style="width: 40px; height: 25px;" type="text"/>
		<i>Years</i>	<i>Months</i>
<b>7.2</b>	<input style="width: 95%; height: 40px;" type="text"/>	<input style="width: 40px; height: 25px;" type="text"/>	<input style="width: 40px; height: 25px;" type="text"/>
		<i>Years</i>	<i>Months</i>
<b>7.3</b>	<input style="width: 95%; height: 40px;" type="text"/>	<input style="width: 40px; height: 25px;" type="text"/>	<input style="width: 40px; height: 25px;" type="text"/>
		<i>Years</i>	<i>Months</i>

**8.0** The **Subcontractor's Certification** with the CT Secretary of State:

Check Box	Type of Business Entity:	Certification Year
<input type="checkbox"/>	Corporation	<input style="width: 100%; height: 25px;" type="text"/>
<input type="checkbox"/>	Partnership	<input style="width: 100%; height: 25px;" type="text"/>
<input type="checkbox"/>	Sole Proprietorship	<input style="width: 100%; height: 25px;" type="text"/>
<input type="checkbox"/>	Limited Liability Company (LLC)	<input style="width: 100%; height: 25px;" type="text"/>
<input type="checkbox"/>	Other: <input style="width: 350px; height: 25px;" type="text"/>	<input style="width: 100%; height: 25px;" type="text"/>



**9.0** Attach resumes of all supervisory personnel, such as Principals, Project Managers, and Superintendents, who will be directly involved with this project on which you are now a **Named Subcontractor Bidder** for a specific **Class of Work**. Indicate the number of years of construction experience and number of years of which they were in a Supervisory capacity.

**10.0** List all sub-trades which your firm customarily performs with own employees – **this table must be completed for electrical and plumbing trades for all projects.**

	Trade Name	License Holder Name	Connecticut D.C.P. License No.: Format: Prefix - Number - Suffix
10.1			
10.2			
10.3			
10.4			
10.5			

**11.0 Trade References:**  
 Names, addresses and telephone numbers of several firms with whom your organization has regular business dealings (attach separate sheets as necessary).

**12.0** List all construction projects your firm currently has under contract. Provide all of the information listed below. DAS/CS *may* reject a bid as **non-responsive** if the bidder does not make **all** required pre-award submittals within the designated time period. Attach additional sheets as necessary **using the following format:**

<b>12.1</b>	<b>Project Title:</b>		
<b>12.2</b>	<b>Project Location:</b>		
<b>12.3</b>	<b>Construction Start Date:</b>		
<b>12.4</b>	<b>Construction Finish Date:</b>		
<b>12.5</b>	<b>Describe the Scope of Work your Firm performed:</b>		
<b>12.6</b>	<b>Original Contract Amount:</b>		
<b>12.7</b>	<b>Final Contract Amount:</b>		
<b>12.8</b>	<b>Original Contract Duration (Calendar Days):</b>		
<b>12.9</b>	<b>Final Contract Duration (Calendar Days):</b>		
<b>12.10</b>	<b>*Briefly describe any complaints about your Firm's quality control or construction management.</b>		
	<b>*Attach a separate sheet if more space is required.</b>		
<b>12.11</b>	<b>Owner:</b>		
<b>12.12</b>	<b>Owner's Representative:</b>		
		<i>(Name)</i>	<i>(Phone Number)</i>
<b>12.13</b>	<b>Design Firm:</b>		
<b>12.14</b>	<b>Design Firm's Representative:</b>		
		<i>(Name)</i>	<i>(Phone Number)</i>
<b>12.15</b>	<b>General Contractor:</b>		
<b>12.16</b>	<b>G.C.'s Representative:</b>		
		<i>(Name)</i>	<i>(Phone Number)</i>

**13.0 List all** construction projects your firm has completed in the **past five (5) years or list the ten (10) projects** your firm has most recently completed. Provide **all** of the information listed below. DAS/CS *may* reject a bid as **non-responsive** if the bidder does not make **all** required pre-award submittals within the designated time period. Attach additional sheets as necessary **using the following format:**

<b>13.1 Project Title:</b>		
<b>13.2 Project Location:</b>		
<b>13.3 Construction Start Date:</b>		
<b>13.4 Construction Finish Date:</b>		
<b>13.5 Describe the Scope of Work your Firm performed:</b>		
<b>13.6 Original Contract Amount:</b>		
<b>13.7 Final Contract Amount:</b>		
<b>13.8 Original Contract Duration (Calendar Days):</b>		
<b>13.9 Final Contract Duration (Calendar Days):</b>		
<b>13.10 *Briefly describe any complaints about your Firm's quality control or construction management.</b>		
	<i>*Attach a separate sheet if more space is required.</i>	
<b>13.11 Owner:</b>		
<b>13.12 Owner's Representative:</b>		
	<i>(Name)</i>	<i>(Phone Number)</i>
<b>13.13 Design Firm:</b>		
<b>13.14 Design Firm's Representative:</b>		
	<i>(Name)</i>	<i>(Phone Number)</i>
<b>13.15 General Contractor:</b>		
<b>13.16 G.C.'s Representative:</b>		
	<i>(Name)</i>	<i>(Phone Number)</i>

**14.0** Has your Firm ever failed to complete a contract or has any officer or partner of your Firm ever been an officer or partner of another organization that failed to complete a contract? If so, indicate below the circumstances leading to the project failure and the name of the company which provided the bonding for the failed contract(s):

Not Applicable

**15.0** List all legal or administrative proceedings currently pending or concluded adversely within the last five years which relate to procurement or performance of any public or private construction contracts. (Exclude Occupational Safety and Health Act [OSHA] violations which are called for elsewhere in this statement). Add attachment as necessary.

Not Applicable

**16.0** List all willful or serious violations of any OSHA or of any standard, order or regulation promulgated pursuant to such act, during the three year period preceding the bid, provided such violations were cited in accordance with the provisions of any State Occupational Safety and Health Act or Occupational Safety and Health Act of 1970. Indicate whether these were abated within the time fixed by the citation or whether the citation was appealed. If appealed what is the status or disposition. Add attachments as necessary.

Not Applicable

**17.0** Has your Firm had any criminal convictions related to the injury or death of any employee in the three-year period preceding the bid? Please list any such convictions below. Add attachments as necessary.

Not Applicable

**18. Signature**

Dated at

Signed this  day of  , 20

Name of Firm:

Firm Address:

*(Signature)*

*(Print or Type Name)*

*(Title)*

**19. Notary Statement**

Mr./Mrs./Ms.  being duly sworn

deposes and says that he/she is the  of

*(Position or Title)*

, and that the answers to the foregoing

*(Firm Name)*

questions and all statements therein contained are true and correct.

Subscribed and sworn before me this  day of  , 20

Notary Public

My Commission Expires  , 20



## Contract

DAS | Construction Services | Office of Legal Affairs, Policy, and Procurement

Contract For:

Dated as of  by and between the **State of Connecticut** (herein called the  
*(Month, Day, Year)*

“State”) acting herein by its Commissioner, Department of Administrative Services under the provisions of the Connecticut General Statutes (C.G.S.) Sections 4-8, 4a-1, 4a-1a, 4a-2, 4b-1, and 4b-3, as revised, and  (herein called the “Contractor”).

*(Print Name of Contractor)*

WITNESSETH, that the State and the Contractor in consideration of the hereinafter contained mutual promises and covenants, do hereby agree as follows:

### 1. CONTRACT AND CONTRACT DOCUMENTS:

The **Invitation for Bids**, the enumerated **Plans**, the **Specifications** and **Amendments** thereto, the **Addenda**, the **Bid Proposal** as accepted by the Commissioner, Department of Administrative Services, **Order of Award**, which Order is made a part of this **Contract**, the **General Conditions**, the **General Requirements**, the **Contract** and the **Bonds** shall form part of this **Contract** and the **provisions** thereof shall be as binding upon the parties as if they were fully set forth herein. The tables of contents, titles, headings, running headlines and marginal notes contained herein and in said Documents, are solely to facilitate to various provisions of the Contract Documents and in no way affect, limit, or cast light upon the interpretations of the provisions to which they refer. Whenever the term “Contract Documents” is used, it shall mean and include this **Contract**, the **Invitation for Bids**, the enumerated **Plans**, **Specifications** and **Amendments** thereto, the **Addenda**, the **Bid Proposal** as accepted by the Commissioner, Department of Administrative Services, the **General Conditions**, the **General Requirements**, the **Bonds**, the **Notice to Bidders**, the **Wage Scales**, the **Supplementary Conditions**, and the **Insurance Certificates**.

### 2. SCOPE OF THE WORK:

The Contractor shall furnish all plant, labor, materials, supplies, equipment, and other facilities and things necessary or proper for or incidental to the work contemplated by this Contract as required by and in strict accordance with applicable Plans, Specifications and Amendments thereto, and Addenda (hereinafter enumerated), and as required by and in strict accordance with such changes as are ordered and approved pursuant to this Contract, and will perform all other obligations imposed on him by this Contract.

**3. ENUMERATION OF PLANS, SPECIFICATIONS AND ADDENDA:**

The following is an enumeration of the Plans, Specifications, and Addenda:

<b>Prepared By:</b>	<input type="text"/> <i>(Print Name of Architect/Engineer Firm)</i>
<b>Plans and Specifications:</b>	<input type="text"/>
<b>Addenda:</b>	<input type="text"/>

**4. COMPENSATION TO BE PAID THE CONTRACTOR**

The State will pay and the Contractor will accept in full consideration for the performance of the Contractor's obligation hereunder the sum of:

<input type="text"/>	Dollars and 00/100 (\$	<input type="text"/>	)
----------------------	------------------------	----------------------	---

**5. PROVISIONS REQUIRED BY LAW DEEMED INSERTED**

Each and every provision of law and clause required by law to be inserted in this Contract shall be deemed to be inserted herein and the Contract shall be read and enforced as though it were included herein, and if through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon the application of either party, the Contract shall forthwith be physically amended to make such insertion.

For all State contracts as defined in the **C.G.S. §9-612(f)(1)(C)**, having a value in a calendar year of \$50,000 or more or a combination or series of such agreements or contracts having a value of \$100,000 or more, the authorized signatory to this Agreement expressly acknowledges receipt of the State Elections Enforcement Commission's notice advising state contractors of campaign contribution and solicitation prohibitions, and will inform its principals of the contents of the notice. See **SEEC Form 10**.

Contractor hereby irrevocably assigns to the State of Connecticut all rights, title and interest in and to all **Claims\* associated with this Contract** that Contractor now has or may or will have and that arise under the antitrust laws of the United States, **15 USC Section 1, et seq.** and the antitrust laws of the State of Connecticut, **C.G.S. §35-24, et seq.**, including but not limited to any and all Claims for overcharges. This assignment shall become valid and effective immediately upon the accrual of a Claim without any further action or acknowledgment by the parties.

**\*Definition of Claims associated with this Contract:** "All actions, suits, claims, demands, investigations and proceedings of any kind, open, pending or threatened, whether mature, unmaturing, contingent, known or unknown, at law or in equity, in any forum."



**IN WITNESS WHEREOF**, the Commissioner, Department of Administrative Services for and on behalf of the State of Connecticut, and the Contractor have executed this contract on the day and year first written.

<b>Attested By:</b>		<b>State Of Connecticut</b>	
WITNESS: <input type="text"/>	<i>(Signature)</i>	By: <input type="text"/>	<i>(Signature)</i>
Print Name: <input type="text"/>		Print Name: <b>Josh Geballe</b>	
WITNESS: <input type="text"/>	<i>(Signature)</i>	Its: <b>Commissioner</b>	
Print Name: <input type="text"/>		<b>Department of Administrative Services</b>	
		Date Signed: <input type="text"/>	
			<input type="text"/>
			<b>SEAL</b>
WITNESS: <input type="text"/>	<i>(Signature)</i>	Contractor: <input type="text"/>	
Print Name: <input type="text"/>		By: <input type="text"/>	<i>(Signature)</i>
WITNESS: <input type="text"/>	<i>(Signature)</i>	Its: <input type="text"/> , <b>Duly Authorized</b>	
Print Name: <input type="text"/>		Print Name: <input type="text"/>	
		Date Signed: <input type="text"/>	

**End of Section  
00 52 03 Contract**



## Subcontract Agreement Form

### DAS | Construction Services | Office of Legal Affairs, Policy, and Procurement

In accordance with the requirements of the Connecticut General Statutes (C.G.S.) §4b-96, the Contractor selected for the Contract shall provide to each of its listed or substitute Named Subcontractors the relevant subcontract, along with a notice setting forth the time limit for execution of such subcontract. The Contractor selected for the Contract shall file with the State of Connecticut Department of Administrative Services (DAS) Construction Services Office of Legal Affairs, Policy, and Procurement an executed copy of each subcontract within ten (10) days (Saturdays, Sundays and legal holidays excluded) of presentation of the subcontract to each subcontractor. Each subcontract shall include at least the provisions set forth in the **Subcontract** form found in C.G.S. §4b-96 and shall follow the order of this **Subcontract Agreement Form**.

#### **C.G.S. §4b-96. Subcontract, form. Procedure on failure of subcontractor to execute subcontract. General bidder's responsibilities.**

Within five days after being notified of the award of a general contract by the awarding authority, or, in the case of an approval of a substitute subcontractor by the awarding authority, within five days after being notified of such approval, the general bidder shall present to each listed or substitute subcontractor (1) a subcontract in the form set forth in this section and (2) a notice of the time limit under this section for executing a subcontract. If a listed subcontractor fails within five days, Saturdays, Sundays and legal holidays excluded, after presentation of a subcontract by the general bidder selected as a general contractor, to perform his agreement to execute a subcontract in the form hereinafter set forth with such general bidder, contingent upon the execution of the general contract, the general contractor shall select another subcontractor, with the approval of the awarding authority. When seeking approval for a substitute subcontractor, the general bidder shall provide the awarding authority with all documents showing (A) the general bidder's proper presentation of a subcontract to the listed subcontractor and (B) communications to or from such subcontractor after such presentation. The awarding authority shall adjust the contract price to reflect the difference between the amount of the price of the new subcontractor and the amount of the price of the listed subcontractor if the new subcontractor's price is lower and may adjust such contract price if the new subcontractor's price is higher. The general bidder shall, with respect to each listed subcontractor or approved substitute subcontractor, file with the awarding authority a copy of each executed subcontract within ten days, Saturdays, Sundays and legal holidays excluded, of presentation of a subcontract to such subcontractor. The subcontract shall be in the following form:

*(See page 2 and page 3)*

**SUBCONTRACT**

THIS AGREEMENT made this day of , 20, by and between a corporation organized and existing under the laws of (a partnership consisting of ) (an individual doing business as ) hereinafter called the "Contractor" located at (insert complete address) \_\_\_\_\_, and a corporation organized and existing under the laws of (a partnership consisting of ) (an individual doing business as ) hereinafter called the "Subcontractor", located at (insert complete address) \_\_\_\_\_.

WITNESSETH that the Contractor and the Subcontractor for the considerations hereafter named, agree as follows:

1. The Subcontractor agrees to furnish all labor and materials required for the completion of all work specified in Section No. of the specifications for (Name of Subtrade) and the plans referred to therein and addenda No. , and for the (Complete title of project and the project number taken from the title page of the specifications) all as prepared by (Name of Architect or Engineer) for the sum of (\$) and the Contractor agrees to pay the Subcontractor said sum for said work. This price includes the following alternates:

Supplemental No. (s) , , , , , .

(a) The Subcontractor agrees to be bound to the Contractor by the terms of the hereinbefore described plans, specifications (including all general conditions stated therein which apply to his trade) and addenda No. , , , and , and , and to assume to the Contractor all the obligations and responsibilities that the Contractor by those documents assumes to the (Awarding Authority) , hereinafter called the "Awarding Authority", except to the extent that provisions contained therein are by their terms or by law applicable only to the Contractor.

(b) The Contractor agrees to be bound to the Subcontractor by the terms of the hereinbefore described documents and to assume to the Subcontractor all the obligations and responsibilities that the Awarding Authority by the terms of the hereinbefore described documents assumes to the Contractor, except to the extent that provisions contained therein are by their terms or by law applicable only to the Awarding Authority.

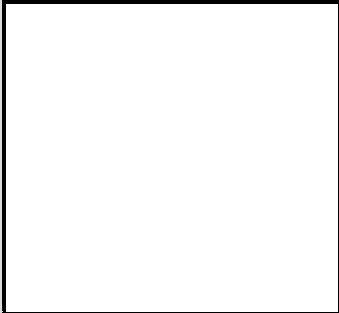
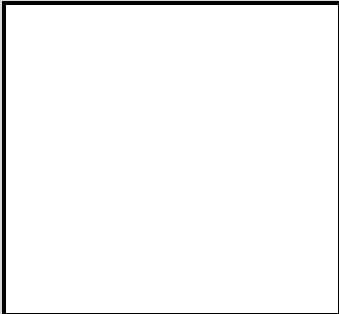
2. The Contractor agrees to begin, prosecute and complete the entire work specified by the Awarding Authority in an orderly manner so that the Subcontractor will be able to begin, prosecute and complete the work described in this subcontract; and, in consideration thereof, upon notice from the Contractor, either oral or in writing, the Subcontractor agrees to begin, prosecute and complete the work described in this Subcontract in an orderly manner in accordance with completion schedules prescribed by the general contractor for each subcontract work item, based on consideration to the date or time specified by the Awarding Authority for the completion of the entire work.

3. The Subcontractor agrees to furnish to the Contractor, within a reasonable time after the execution of this subcontract, evidence of workers' compensation insurance as required by law and evidence of public liability and property damage insurance of the type and in limits required to be furnished to the Awarding Authority by the Contractor.

4. The Contractor agrees that no claim for services rendered or materials furnished by the Contractor to the Subcontractor shall be valid unless written notice thereof is given by the Contractor to the Subcontractor during the first forty (40) days following the calendar month in which the claim originated.

5. This agreement is contingent upon the execution of a general contract between the Contractor and the Awarding Authority for the complete work.

IN WITNESS WHEREOF, the parties hereto have executed this agreement the day and year first above-written.

<b>Subcontractor</b>	
	<input type="text"/>
	<b>Subcontractor</b>
	By: <input type="text"/>
	<i>(Print Name)</i>
	Its: <input type="text"/>
	<b>Duly Authorized</b>
ATTEST: <input type="text"/>	<input type="text"/>
<i>(Signature)</i>	<i>(Subcontractor Signature)</i>
Date: <input type="text"/>	Date: <input type="text"/>
<b>Contractor</b>	
	<input type="text"/>
	<b>Contractor</b>
	By: <input type="text"/>
	<i>(Print Name)</i>
	Its: <input type="text"/>
	<b>Duly Authorized</b>
ATTEST: <input type="text"/>	<input type="text"/>
<i>(Signature)</i>	<i>(Contractor Signature)</i>
Date: <input type="text"/>	Date: <input type="text"/>

**End of Section  
00 52 73 Subcontract Agreement Form**





## CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

**IMPORTANT:** If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

<b>PRODUCER</b>  Contractor's Legal Name and Address	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2"><b>CONTACT NAME:</b></td> </tr> <tr> <td><b>PHONE (A.C. No. Ext):</b></td> <td><b>FAX (A.C. No.):</b></td> </tr> <tr> <td colspan="2"><b>E-MAIL ADDRESS:</b></td> </tr> <tr> <td style="text-align: center;"><b>INSURER(S) AFFORDING COVERAGE</b></td> <td style="text-align: center;"><b>NAIC #</b></td> </tr> <tr> <td><b>INSURER A:</b></td> <td></td> </tr> <tr> <td><b>INSURER B:</b></td> <td></td> </tr> <tr> <td><b>INSURER C:</b></td> <td></td> </tr> <tr> <td><b>INSURER D:</b></td> <td></td> </tr> <tr> <td><b>INSURER E:</b></td> <td></td> </tr> <tr> <td><b>INSURER F:</b></td> <td></td> </tr> </table>	<b>CONTACT NAME:</b>		<b>PHONE (A.C. No. Ext):</b>	<b>FAX (A.C. No.):</b>	<b>E-MAIL ADDRESS:</b>		<b>INSURER(S) AFFORDING COVERAGE</b>	<b>NAIC #</b>	<b>INSURER A:</b>		<b>INSURER B:</b>		<b>INSURER C:</b>		<b>INSURER D:</b>		<b>INSURER E:</b>		<b>INSURER F:</b>	
<b>CONTACT NAME:</b>																					
<b>PHONE (A.C. No. Ext):</b>	<b>FAX (A.C. No.):</b>																				
<b>E-MAIL ADDRESS:</b>																					
<b>INSURER(S) AFFORDING COVERAGE</b>	<b>NAIC #</b>																				
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<b>INSURER C:</b>																					
<b>INSURER D:</b>																					
<b>INSURER E:</b>																					
<b>INSURER F:</b>																					

**COVERAGES** **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL SUIN INSR WORD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
	<b>GENERAL LIABILITY</b> <input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-WIDE <input checked="" type="checkbox"/> OCCUR  GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PROJECT <input type="checkbox"/> LOC		Policy Number must be provided	Policy Effective Date must be provided	Policy Expiration Date must be provided	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 100,000 MED EXP (Any one person) \$ 5,000 PERSONAL & ADY INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - CCMPOV AGG \$ 2,000,000
	<b>AUTOMOBILE LIABILITY</b> <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> NON-OWNED AUTOS		Policy Number must be provided	Policy Effective Date must be provided	Policy Expiration Date must be provided	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$
	<input type="checkbox"/> UMBRELLA LIAB <input type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED: <input type="checkbox"/> RETENTION \$					EACH OCCURRENCE \$ AGGREGATE \$
	<b>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</b> ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) <input type="checkbox"/> Y/N If yes, describe under DESCRIPTION OF OPERATIONS below	N/A	Policy Number must be provided	Policy Effective Date must be provided	Policy Expiration Date must be provided	<input checked="" type="checkbox"/> WC STATUTORY LIMITS <input type="checkbox"/> OTHER E.L. EACH ACCIDENT \$ 100,000 E.L. DISEASE - EA EMPLOYEE \$ 100,000 E.L. DISEASE - POLICY LIMIT \$ 500,000
	Owner's and Contractor's Protective Liability Builder's Risk (include here when applicable)					Bodily Injury or Death (per occ.) Total \$ 1,000,000 Property Damages Total (aggregate) \$ 2,000,000 Completed Value

**DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES:** (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

Indicate Project Number and Title here

The State of Connecticut is an Additional Insured with respect to General Liability and Umbrella/Excess Liability Insurance coverage.

If Builder's Risk and or Inland Marine/Transit Insurance is required then the State is endorsed as a Loss Payee.

<b>CERTIFICATE HOLDER</b> State of Connecticut Department of Administrative Services, Construction Services Office of Legal Affairs, Policy and Procurement 450 Columbus Boulevard, Suite 1302 Hartford, CT 06103-1838	<b>CANCELLATION</b> SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.  AUTHORIZED REPRESENTATIVE Agent of Producer
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ACORD 25 (2010/05)

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**End of Section**  
**00 62 16 Certificate of Insurance**





## Asbestos Abatement Liability Insurance

### DAS | Construction Services | Office of Legal Affairs, Policy, and Procurement

Contractor shall provide Asbestos Abatement Liability insurance **with limits of no less than \$1,000,000.00 per occurrence**. Such insurance shall include all operations associated with hazardous materials removal and shall be written on an **occurrence basis form**. The State of Connecticut shall be named as an Additional Insured.

Asbestos abatement coverage may alternatively be provided under a Commercial General Liability policy provided the policy is specifically endorsed to provide asbestos abatement coverage.

End of Section  
00 62 16.1 Asbestos Attachment To Accord Form



**General Conditions of the Contract for Construction  
 For Design-Bid-Build  
 Department of Construction Services  
 State of Connecticut  
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**ARTICLE 1**  
**DEFINITIONS**

WHENEVER THE FOLLOWING TERMS, OR PRONOUNS IN PLACE OF THEM, ARE USED THE INTENT AND MEANING SHALL BE AS FOLLOWS:

**1.1 ACCEPTANCE:** The Owner's acknowledgement of the Work from the Contractor upon certification by the Construction Administrator and Architect or Engineer that all Work has been completed.

**1.2 ADDITIONAL OR DELETED WORK:** Work required by the Department that, in the judgment of the Commissioner, involves any addition to, deduction from, or modification of the Work required by the Contract Documents.

**1.3 AGENCY:** The (User) Agency of the State of Connecticut having administrative authority of the facility in which the Work is being performed.

**1.4 APPLICATION FOR PAYMENT, PARTIAL PAYMENT OR REQUISITION:** Contractor's certified request for payment for completed portions of the Work and, if the Contract so provides, for materials or equipment suitably stored pending their incorporation into the Work.

**1.5 ARCHITECT OR ENGINEER:** A sole proprietor, partnership, firm, corporation or other business organization under Contract with the Owner, commissioned to prepare Contract Drawings and Specifications, to advise the Owner and in certain cases, to perform regular inspections during construction and when authorized to perform the duties of the Construction Administrator.

**1.6 AS-BUILT DRAWINGS:** Construction Drawings revised by the Contractor to show all significant Modifications made during the construction process.

**1.7 BASE BID:** Monetary value stated in the Bid Proposal Form as the sum for which the Bidder offers to perform the Work described in the Bidding Documents, exclusive of adjustments for Supplemental Bids.

**1.8 BID BOND:** Form of Bid Security executed by the Bidder as Principal and by a Surety to guarantee that the Bidder will enter into a Contract within a specified time and furnish any required bond as mandated by Connecticut General Statute Section 4b-92.

**1.9 BIDDER:** A sole proprietor, partnership, firm, corporation or other business organization submitting a Bid on the Bid Proposal Form for the Work contemplated.

**1.10 BIDDING DOCUMENTS:** Collectively, the Bidding Requirements and the proposed Contract Documents, including any addenda issued prior to receipt of Bids.

**1.11 BID OR BID PROPOSAL FORM:** A complete and duly signed proposal to perform Work (or a designated portion thereof) for a stipulated sum submitted in accordance with the Bidding Documents.

**1.12 BID SECURITY:** Certified check or Bid Bond submitted with Bid Proposal Form, which provides that the Bidder, if awarded the Contract, will execute such Contract in accordance with the requirements of the Bidding Documents.

**1.13 BUILDER'S RISK INSURANCE:** A specialized form of property insurance which provides coverage for loss or damage to the Work pursuant to the Contract Documents.

**1.14 CASH ALLOWANCE:** An amount established in the Contract Documents for inclusion in the Contract Sum to cover the cost of prescribed items not specified in detail, and as shown in the Allowance Schedule.

**1.15 CERTIFICATE OF ACCEPTANCE:** A document issued by the Owner to the Contractor stating that all Work specified in the Certificate of Acceptance has been completed and accepted by the Owner.

**1.16 CERTIFICATE OF COMPLIANCE:** A document stating that for the portion of the Project completed, either the design portion or the construction portion, has been performed in substantial compliance with all applicable building codes.

**1.17 CERTIFICATE OF OCCUPANCY:** Document issued by the authority having jurisdiction certifying that all or a designated portion of a building is approved for its designated use.

**1.18 CERTIFICATE OF SUBSTANTIAL COMPLETION:** A document prepared by the Architect or Engineer and approved by the Owner on the basis of an inspection stating:

**1.18.1** that the Work, or a designated portion thereof, is determined to be Substantially Complete;

**1.18.2** the date of Substantial Completion;

**1.18.3** the responsibilities of the Owner and the Contractor for security maintenance, heat, utilities, damage to the Work and insurance; and

**1.18.4** the time within which the Contractor shall complete the remaining Work.

**1.19 CHANGE ORDER:** Written authorization signed by the Owner, authorizing a modification in the Work, an adjustment in the Contract Sum, or an adjustment in the Contract Time.

**1.20 COMMISSIONER:** The State of Connecticut, Department of Construction Services (CT DCS) Commissioner acting directly or through specifically authorized CT DCS personnel or agent(s) having authority to perform duties defined in Article 25.

**1.21 COMMISSIONING AGENT (CxA):** An independent entity under contract directly with the Owner or Owner's Representative responsible for performing the specified commissioning procedures.

**1.22 CONSTRUCTION ADMINISTRATOR:** A sole proprietor, partnership, firm, corporation or other business organization, under Contract or employed by the Owner commissioned and/or authorized to oversee the fulfillment of all requirements

of the Contract Documents. The authorized Construction Administrator may be a Department of Construction Services Assistant Project Manager, Department of Construction Services Project Manager, a Clerk of the Works, an Architect, a Consulting Architect, a Consulting Construction Administrator, a Consulting Engineer etc. or any other designee as authorized and identified by the Owner.

**1.23 CONSTRUCTION CHANGE DIRECTIVE:** A written authorization signed by the Owner, directing a modification in the Work and stating a proposed basis for adjustment, if any, in the Contract Sum, Contract Time or both. Any Construction Change Directive effecting an adjustment to the Contract Sum or Contract Time shall result in a Change Order.

**1.24 CONTRACT DOCUMENTS OR CONTRACT:** The Agreement between Owner and Contractor, Conditions of the Contract (General Conditions, Supplementary Conditions, General Requirements and other Conditions), Drawings, Specifications, and Addenda issued prior to execution of the Contract, other documents listed in the Agreement and Modifications issued after execution of the Contract, all of which shall constitute the Contract.

**1.25 CONTRACTOR OR GENERAL CONTRACTOR:** A sole proprietor, partnership, firm or Corporation, under direct Contract with the Department of Construction Services, responsible for performing the Work under the Contract Documents. Whenever the words "Contractor" or "General Contractor" are used it shall be understood to mean Contractor.

**1.26 CONTRACTOR'S LIABILITY INSURANCE:** Insurance purchased and maintained by the Contractor that insures the Contractor for claims for property damage, bodily injury or death.

**1.27 CONTRACT START DATE OR DATE OF COMMENCEMENT OF THE WORK:** The date, specified by the Owner in the Notice to Proceed, on which the Contractor is required to start the Work.

**1.28 CONTRACT SUM:** The sum stated in the Contract, which is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

**1.29 CONTRACT TIME:** The period of time allotted in the Contract Documents for Substantial Completion of the Work, including authorized adjustments thereto. The Contract Time is the sum of all Working Days and Non-Working Days as further defined herein and specified in the Contract Documents.

**1.30 DAY:** Whenever the word Day is used it shall be understood to mean calendar day stated on the Bidding Documents, unless stated otherwise.

**1.31 DEPARTMENT OF CONSTRUCTION SERVICES (CT DCS) PROJECT MANAGER:** The individual employed by the Owner, designated and authorized by the Commissioner, to be

responsible for the overall management and oversight of the Project, and to represent the (User) Agency.

**1.32 DIESEL VEHICLE EMISSIONS CONTROL:** The reduction of air pollution emissions from diesel powered vehicles through the use of diesel engine emission control technologies.

**1.33 EQUAL(S):** Any deviation from the Specification which is defined as follows: A replacement for the specified material, device, procedure, equipment, etc., which is recognized and accepted as substantially equal to the first listed manufacturer or first listed procedure specified after review by the Architect/Engineer, and may be rejected or approved at the sole discretion of the Owner. All equals must be substantially equivalent to the first manufacturer or first procedure listed in the Specifications with reference to all of the following areas: the substance and function considering quality, workmanship, economy of operation, durability, and suitability for purposes intended; size, rating, and cost. The equal does not constitute a modification in the scope of Work, the Schedule, or Architect/Engineer's design intent of the specified material, device, procedure, equipment, etc.

**1.34 FINAL INSPECTION:** Review of the Work by the Architect or Engineer and Owner to determine whether Acceptance has been achieved.

**1.35 FINAL PAYMENT:** The last payment made by the Owner to the Contractor, made after notice of the Acceptance. Payment shall include the entire unpaid balance of the Contract Sum as adjusted by modifications.

**1.36 GENERAL CONDITIONS:** The General Conditions of the Contract for Construction, part of Division 00 of the Specifications.

**1.37 GENERAL REQUIREMENTS:** That part of the Contract Documents entitled General Requirements, which is Division 01 of the Specifications.

**1.38 GUARANTEE:** See Warranty.

**1.39 LIQUIDATED DAMAGES:** A sum established in a Contract, usually as a fixed sum per Day, as the predetermined measure of damages to be paid to the Owner due to the Contractor's failure to complete the Work within the Contract Time.

**1.40 LUMP SUM:** An item or category priced as a whole rather than broken down into its elements.

**1.41 MOBILE SOURCE:** A source designed or constructed to move from one location to another during normal operation except portable equipment and includes, but is not limited to, automobiles, buses, trucks, tractors, earth moving equipment, hoists, cranes, aircraft, locomotives operating on rails, vessels for transportation on water, lawnmowers, and other small home appliances.

**1.42 NON-WORKING DAYS:** All Saturdays, Sundays, Legal State Holidays (12), and any other Days identified in the

Contract Documents that the Contractor is not permitted to execute the Work. The restriction of Non-Working Days may be suspended upon the approval or direction of the Commissioner.

**1.43 NOTICE TO BIDDER:** A notice contained in the Bidding Document informing prospective Bidders of the opportunity to submit Bids on a Project.

**1.44 NOTICE TO PROCEED:** Written notice, issued by the Commissioner or the Commissioner's authorized representative, to the Contractor authorizing the Contractor to proceed with the Work and establishing the date for commencement of the Contract Time.

**1.45 OWNER OR DEPARTMENT:** The State of Connecticut, Department of Construction Services acting through its Commissioner or specifically authorized Department personnel or agent.

**1.46 OVERHEAD:** Indirect costs including: supervision (any position over the foreman), field and home office expense, insurance, and small tools and consumables.

**1.47 PAYMENT, BOND, LABOR BOND OR MATERIAL BOND:** A bond in which the Contractor and the Contractor's surety guarantee to the Owner that the Contractor will pay for labor and materials furnished for use in the performance of the Contract, as required by Connecticut General Statutes Section 49-41.

**1.48 PERFORMANCE BOND OR SURETY BOND:** A bond in which the Contractor and the Contractor's surety guarantee to the Owner that the Work will be performed in accordance with the Contract Documents, as required by Connecticut General Statutes Section 49-41.

**1.49 PERFORMANCE SPECIFICATION:** A description of the desired results or performance of a product, material, assembly, procedure, or a piece of equipment with criteria for identifying the standard.

**1.50 PLANS OR DRAWINGS:** All Drawings or reproductions of Drawings pertaining to the construction of the Work contemplated and its appurtenances.

**1.51 PROJECT:** The total construction of which the Work performed under the Contract Documents may be the whole or a part.

**1.52 PROJECT MANUAL:** The set of documents assembled for the Work which includes, but is not limited to, Contract Documents, Bidding Requirements, Sample Forms, General Conditions of the Contract for Construction, General Requirements, and the Specifications.

**1.53 PROPRIETARY SPECIFICATION:** A specification that describes a product, procedure, function, material, assembly, or piece of equipment by trade name and/or by naming the manufacturer(s) or manufacturer's procedure, exact model number, item, etc., of those products acceptable to the Owner.

**1.54 RETAINAGE:** A percentage of each Application for Payment and a percentage of the total Contract Sum retained by the Owner.

**1.55 SCHEDULE:** A Critical Path Method (CPM) or Construction Schedule as required by the Contract Documents which shall be a diagram, graph or other pictorial or written Schedule showing all events expected to occur and operations to be performed and indicating the Contract Time, start dates, durations and finish dates as well as Substantial Completion and Acceptance of the Work, rendered in a form permitting determination of the optimum sequence and duration of each operation.

**1.56 SCHEDULE OF VALUES:** A document furnished by the Contractor to the Architect or Engineer and Owner stating the portions of the Contract Sum allocated to the various portions of the Work, which is to be used for reviewing the Contractor's Applications for Payment.

**1.57 SECONDARY SUBCONTRACTOR:** A sole proprietor, partnership, firm or Corporation under direct Contract with the Subcontractor to the General Contractor.

**1.58 SENSITIVE RECEPTOR SITES:** Areas where concentrations of diesel emissions may be harmful to sensitive populations, including, but not limited to, hospitals, school and university buildings being occupied during a student semester, residential structures, daycare facilities, elderly housing, and convalescent facilities.

**1.59 SHOP DRAWINGS:** Drawings provided to Architect or Engineer and Owner by a Contractor that illustrate construction, materials, dimensions, installation, and other pertinent information for the incorporation of an element or item into the construction as detailed Contract Documents.

**1.60 SPECIFICATIONS:** The description, provisions and other requirements pertaining to the method and manner of performing the Work and/or to the quantities and quality of materials to be furnished under the Contract.

**1.61 SUBCONTRACTOR:** A sole proprietor, partnership, corporation or other business organization under direct Contract with the Contractor supplying labor and/or materials for the Work at the site of the Project.

**1.62 SUBMITTALS:** Documents including, but not limited to, samples, manufacturer's data, Shop Drawing, or other such items submitted to the Owner and Architect or Engineer by the Contractor for the purpose of approval or other action, as required by the Contract Documents.

**1.63 SUBSTANTIAL COMPLETION:** The stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents.

**1.64 SUBSTITUTION:** Any deviation from the specified requirements, which is defined as follows: A replacement for

the specified material, device, procedure, equipment, etc., which is not recognized or accepted as equal to the first manufacturer or procedure listed in the Specification after review by the Architect/Engineer, and may be rejected or approved by the Owner. The Substitution is not equal to the specified requirement in comparison to the first manufacturer or first procedure listed in the Specifications in one or more of the following areas: the substance and function considering quality, workmanship, economy of operation, durability, and suitability for purposes intended; size, cost, and rating. The Substitution constitutes a modification in the scope of Work, the Schedule, or the Architect/Engineer's design intent of the specified material, device, procedure, equipment, etc.

**1.65 SUPERINTENDENT:** The Contractor's representative at the site who is responsible for continuous field supervision, coordination, in, completion of the Work, and, unless another person is designated in writing by the Contractor to the Owner and the Construction Administrator, for the prevention of accidents.

**1.66 SUPPLEMENTAL BID:** 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.

**1.67 SUPPLEMENTARY CONDITIONS:** An extension 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.

**1.68 THRESHOLD LIMIT BUILDING:** Any proposed (new) structures or additions as defined by the Connecticut General Statutes Section 29-276b.

**1.69 UNIT PRICE:** The monetary value stated by the Owner or the Contractor, as a price per unit of measurement for materials or services as described in the Contract Documents and/or Bidding Documents.

**1.70 WARRANTY:** A written, legally enforceable assurance of specified quality or performance of a product or Work or of the duration of satisfactory performance.

**1.71 WORK:** The construction and services required by the Contract Documents, and including all labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

## ARTICLE 2 CONDITIONS OF WORK

**2.1** The Contractor shall carefully examine and study the conditions under which the Work is to be performed and the site of the Work, and compare the Contract Documents with each other and to information furnished by the Owner including but not limited to the Plans and Specifications, the form of the Contract, General Conditions, Supplementary Conditions, General Requirements, Bonds and all other Contract Documents associated with the Work.

**2.2** The Contractor shall report to the Construction Administrator all errors, inconsistencies or omissions discovered. The Contractor shall not be liable to the Owner for damage resulting from errors, inconsistencies or omissions in the Contract Documents unless the Contractor recognized such errors, inconsistencies or omission and failed to report it to the Construction Administrator. If the Contractor performs any actions or construction activity knowing it involves an error, inconsistency or omission in the Contract Documents without notice to the Construction Administrator, the Contractor shall assume responsibility for such performance and related costs for the correction and shall not be allowed to submit any claim related to error, inconsistencies or omission.

**2.3** The Contractor shall take field measurements and verify field conditions and shall carefully compare such field measurements and conditions and other information known to the Contractor with the Contract Documents before commencing activities. Errors, inconsistencies or omissions discovered shall be reported to the Construction Administrator at once; and it will be assumed that the Contractor has been satisfied as to all requirements of the Contract Documents. Any deterrent conditions at the site of the Work which are obvious and apparent upon examination of the site but are not indicated on the Plans shall be corrected by the Contractor without additional compensation.

**2.4** In performing the Work, the Contractor must employ such methods or means as will not cause any interruption of or interference with the Work of any other Contractor, nor any inordinate disruption with the normal routine of the Owner, institution or Agency operating at the site.

**2.5** No claims for additional compensation will be considered when additional costs result from conditions made known to, discovered by, or which should have been discovered by, the Contractor prior to Contract signing.

**2.6** All Communications from the Contractor concerning proposed changes to the Contract Sum, Contract Time, or Work shall be in writing.

**2.7** The Contractor shall perform the Work in accordance with the Contract Documents and approved Submittals pursuant to Article 5.

## ARTICLE 3 CORRELATION OF CONTRACT DOCUMENTS

**3.1** The Contract Documents are complementary, and what is called for by any one shall be as binding as if called for by all. Where discrepancies or conflict occur in the Contract Documents the following order of precedence shall be utilized:

**3.1.1** Amendments and addenda shall take precedence over previously issued Contract Documents.

**3.1.2** The Supplementary Conditions take precedence over the General Conditions.

**3.1.3** The General Conditions take precedence over the General Requirements.

**3.1.4** The Specifications shall take precedence over the Plans.

**3.1.5** Stated dimensions shall take precedence over scaled dimensions.

**3.1.6** Large-scale detail Drawings shall take precedence over small-scale Drawings.

**3.1.7** The Schedules contained in the Contract Documents shall take precedence over other data on the Plans.

**3.2** Neither party to the Contract shall take advantage of any obvious error or apparent discrepancy in the Contract Documents. The Contractor shall give immediate written notification of any error or discrepancy discovered to the Construction Administrator, who shall take the necessary actions to obtain such corrections and interpretations as may be deemed necessary for the completion of the Work in a satisfactory and acceptable manner. The Contractor shall then promptly proceed under the direction of the Owner and the provisions of Article 13. The Contractor's failure to provide immediate notice shall mean the Contractor will not be entitled to any additional compensation, either monetary or Contract Time adjustment, with respect to any discrepancy.

**3.3** Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become familiar with local conditions under which the Work is to be performed, and correlated personal observations with requirements of the Contract Documents.

**3.4** Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings, shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

**3.5** Unless otherwise stated in the Contract Documents, words which have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

#### **ARTICLE 4** **COMMENCEMENT AND PROGRESS OF WORK**

**4.1** The Work shall start upon the date given in the Notice to Proceed. The Contractor shall complete all the Work necessary for Final Payment, including but not limited to Substantial Completion, Contract close-out, testing and demonstration of all systems as required for Acceptance, punchlist Work, training and submission of Record Documents, manuals, Guarantees and Warranties as stated in the Contract Document.

**4.2** Time is of the essence with respect to the Contract Time. By executing the Contract, the Contractor confirms and agrees that the Contract Time is a reasonable period to perform the Work. The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time. The Contractor may, at his discretion, plan to complete the Work and achieve Substantial Completion in less time than the Contract Time.

**4.3** The Contractor's early completion Schedule

notwithstanding, the Owner reserves the right to order Modifications to the Work in accordance with Article 13 at any time during the Contract Time.

**4.4** The Contractor shall not be entitled to costs for delay due to Owner ordered Modifications or any other circumstances for the period of time between the Contractor's elected early completion and the end of the Contract Time. Such costs include, but are not limited to, extended home office costs, field office costs, or supervisory and management costs incurred in performance of the Work. Early completion of the Work shall not merit additional compensation.

**4.5** If the Contractor is delayed at any time in the progress of Work by acts of God, such as fire or flood or any action, injunction or stop order issued by any court, judge or officer of the court or any other court action beyond the Owner's control, then the Contract Time may be extended by Change Order for such reasonable time as demonstrated by the Contractor's Schedule and as the Owner may determine that such event has delayed the Work. In any event, the granting of an extension of time shall be solely within the discretion of the Owner.

**4.6** Except as otherwise may be provided herein, extensions of time shall be the Contractor's sole remedy for such delay. No payment or compensation of any kind shall be made to the Contractor for damages because of hindrance in the orderly progress of Work caused by the aforesaid causes.

**4.7** The Contractor acknowledges that the Contract amount includes and anticipates any and all delays, whether avoidable or unavoidable, from said orders, which may issue from any court, judge, court officer, or act of God, and that such delays shall not, under any circumstances, be construed as compensable delays.

**4.8** Any extension of the Contract Time shall be by Change Order pursuant to Article 13.

**4.9** The Contractor shall employ a competent project manager who shall represent the Contractor. Communications given to the project manager shall be binding as if given to the Contractor. The project manager will be employed full time on the Project and be located and assigned to the Project site during and for the duration of the Work.

**4.10** The Contractor shall employ a competent Superintendent and necessary assistants who will be in attendance at the project site during the performance of the Work.

**4.11** Upon execution of the Contract, materials may be purchased. No material escalation costs will be valid or compensable unless the Owner directs, in writing, a delay in the procurement.

#### **ARTICLE 5** **SUBMITTALS, PRODUCT DATA, SHOP** **DRAWINGS AND SAMPLES**



5.1 Contractor shall review, approve, and submit to the Construction Administrator all Submittals including but not limited to, product data, Shop Drawings, and samples, with such promptness as to cause no delay in the Work.

5.2 Correction or approval of such Submittals, Shop Drawings, product data and samples will be made with reasonable promptness by the Architect or Engineer. Approval will be general only and shall not relieve the Contractor from responsibility for errors in dimensions, for construction and field coordination of the Work or for any departure from the Contract Documents, unless such departure has received the Owner's written approval.

5.3 No Work governed by such Shop Drawings, Schedules or samples shall be fabricated, delivered or installed until approved by the Architect or Engineer.

5.4 No damages for delays or time extensions will be granted, even if approvals deviate from the approved Schedule.

#### **ARTICLE 6 SEPARATE CONTRACTS**

6.1 The Owner reserves the right to perform Work in connection with the Contract with the Owner's own forces, or to let separate contracts relating to the Contract (Project) site or in connection with Work on adjoining sites. In such cases, the Contractor shall afford such parties reasonable opportunity for storage of materials and equipment and coordinate and connect the Work with the work on adjoining sites or other Projects, and shall fully cooperate with such parties in the matter required under Article 7 herein.

6.2 Contractors working in the same vicinity shall cooperate with one another and, in case of dispute, decision of the Owner shall be final and binding to all Contractors involved, including Contractors under separate Contracts.

6.3 The Contractor shall assume all liability, financial or otherwise, in connection with this Contract and shall protect and hold harmless the Owner from any and all damages or claims that may arise because of inconvenience or delay which the Contractor may cause other Contractors. If the Contractor experiences a loss because of the presence and operations of other Contractors working adjacent to or within the limits of the same Project, then as between the Owner and the Contractor, the Contractor shall bear such loss.

6.4 Insofar as possible, the Contractor shall arrange the Work and shall place and dispose of the materials being used so as not to interfere with the operations of other Contractors adjacent to or within the limits of the same Project. The Contractor shall join its Work with that of others in an acceptable manner, and perform the Work in proper accordance with that of the others.

6.5 In no event shall the Owner be responsible for any claim or damages that are the result of the Contractor's failure

to coordinate the Work with any other Contractor or Subcontractor.

#### **ARTICLE 7 COOPERATION OF TRADES**

7.1 The Contractor shall be responsible for and shall control all activities of their Subcontractors. The Subcontractors shall consult and cooperate with one another. Each Subcontractor shall furnish all necessary information to other Subcontractors and shall lay out and install their own Work so as to avoid any delays or interference with the Work of others.

7.2 Any cost or changes, cutting and/or repairing, made necessary by the failure to observe the above requirements shall be borne by the party or parties responsible for such failure or neglect or their faulty Work installed.

#### **ARTICLE 8 DAMAGES**

8.1 The Liquidated Damages, provided in the Bidding Documents, will be assessed at two distinct times, as follows:

##### **8.1.1 Liquidated Damages – Substantial Completion:**

If the Contractor fails to achieve Substantial Completion of the Work by the Substantial Completion Date, and such delay is not otherwise excused under this Contract, then the Contractor agrees to pay to the Owner Liquidated Damages for the dollar amount specified in the Bid Proposal Form for this Project, for each Day beyond Substantial Completion that the Contractor fails to achieve Substantial Completion. The parties to this Contract acknowledge and agree that the actual damages that are to be anticipated as a result of the neglect, failure, or refusal of the Contractor to substantially complete the Project by the established Substantial Completion Date are uncertain in amount or extremely difficult to determine. Accordingly, the parties to this Contract do intend and in fact now agree to liquidate damages in advance and stipulate that the amount set forth in this subparagraph is reasonable and an appropriate remedy and is intended to constitute compensatory damages and does not constitute a penalty of any kind. The parties understand and agree that, by including a provision for Liquidated Damages in this Contract, or in pursuing any relief pursuant to such provision:

.1 the parties do not intend to set a price for the privilege not to perform;

.2 the availability of Liquidated Damages may not be relied upon as a basis for argument that the Owner has an adequate remedy at law; and

.3 the remedies available to the Owner under this Agreement are cumulative and not exclusive.

##### **8.1.2 Liquidated Damages – Acceptance:**

If the Contractor fails to complete all of the Work required for Acceptance of the Work within ninety (90) Days of Substantial Completion then the Contractor agrees to pay

to the Owner Liquidated Damages for the dollar amount specified in the Bid Proposal Form for each Day in excess of ninety (90) Days beyond the Substantial Completion Date that the Contractor fails achieve Acceptance. The parties to this Contract acknowledge and agree that the actual damages that are to be anticipated as a result of the failure of the Contractor to complete all of the Work required for Acceptance within ninety (90) Days of the established Substantial Completion Date are uncertain in amount or extremely difficult to determine. Accordingly, the parties to this Contract do intend and in fact now agree to liquidate damages in advance and stipulate that the amount set forth in this subparagraph is reasonable and an appropriate remedy and is intended to constitute compensatory damages and does not constitute a penalty of any kind. The parties understand and agree that, by including a provision for Liquidated Damages in this Contract, or in pursuing any relief pursuant to such provision:

- .1 the parties do not intend to set a price for the privilege not to perform;
- .2 the availability of Liquidated Damages may not be relied upon as a basis for argument that the Owner has an adequate remedy at law; and
- .3 the remedies available to the Owner under this Agreement are cumulative and not exclusive.

**8.2** The Liquidated Damages or any portion thereof may be waived at the sole discretion of the Commissioner.

**8.3** No payment by the Owner, either partial or final, shall be construed to waive the Owner's right to seek Liquidated Damages.

**8.4** In the event a court determines that the Contract herein is null and void for any reason, Contractor agrees that Contractor will not seek or pursue any lawsuit or claim for damages, including, but not limited to, claims for loss of Overhead or anticipated profits, against the Owner and the Owner shall not be liable for any damages which Contractor may incur as a result of such decision. In addition, if the court enjoins the Owner from entering into or proceeding with the Contract herein, the Owner shall not be liable for any damages arising out of or relating to the award of such Contract which Contractor may have incurred as a result of the injunction.

#### **ARTICLE 9 MINIMUM WAGE RATES**

**9.1** In accordance with the provisions of the Connecticut General Statutes Section 31-53, the following applies:

"The wages paid on an hourly basis to any person performing the work of any mechanic, laborer, or worker on the work herein contracted to be done and the amount of payment or contribution paid or payable on behalf of each such person to any employee welfare fund, as defined in subsection (h) of this section, shall be at a rate equal to the rate customary or prevailing for the same work in the same trade or occupation in the town in which such public works project is being constructed. Any contractor who is not obligated by agreement

to make payment or contribution on behalf of such persons to any such employee welfare fund shall pay to each mechanic, laborer or worker as part of such person's wages the amount of payment or contribution for such person's classification on each payday."

**9.2** Each Contractor who is awarded a Contract on or after October 1, 2002 shall be subject to provisions of the Connecticut General Statutes, Section 31-53 as amended by Public Act 02-69, "An Act Concerning Annual Adjustments to Prevailing Wages."

No wage adjustment will be made to the Contract for any wage increase under this Article.

#### **ARTICLE 10 POSTING MINIMUM WAGE RATES**

**10.1** The Contractor shall post at conspicuous points on the site of the Contract a Schedule showing all determined wage rates for all trades and all authorized deductions, if any, from wages to be paid.

**10.2** The Contractor shall provide weekly certified payrolls to the Owner for all persons working on the site.

#### **ARTICLE 11 CONSTRUCTION SCHEDULES**

**11.1** Unless otherwise specified in the Contract Documents, within twenty-one (21) Days from the Contract Start Date, the Contractor shall submit the following to the Owner for approval:

**11.1.1** A comprehensive Schedule of Submittals required by the Specifications. Said Schedule shall include Submittal dates, required approval dates and date material must be on site.

**11.1.2** The Contractor shall allow a minimum of 14 Days for the Owner and its agents' review of Submittals. No extension of the Contract Time shall be granted for revisions and resubmission. Further, the Contractor shall allow a minimum of eight weeks for testing and Acceptance of the Work by the Owner.

**11.1.3** When the Contract Documents specify a "CPM Schedule" a detailed Critical Path Method Schedule is required using software approved by the Owner and/or Construction Administrator with as many activities as necessary to make the Schedule an effective tool for planning and monitoring the progress of the Work. The Contractor shall show all pertinent activities requiring coordination between trades.

**11.1.4** When the Contract Documents specify a "Construction Schedule" a detailed Construction Schedule is required using software approved by the Owner as a horizontal bar chart with a separate bar for each major portion of the Work or operation to make the Schedule an effective

tool for planning and monitoring the progress of the Work.

**11.2** Unless otherwise specified under the Contract Documents, the Contractor shall provide a monthly update of the CPM Schedule or Construction Schedule in the format required by the Owner as well as a disk of the updated Schedule and program. If, in the opinion of the Owner, the Work is falling behind Schedule, the Contractor shall submit a revised Schedule demonstrating a recovery plan to ensure Substantial Completion of the Work within the Contract Time.

**11.3** Overtime, increased manpower, and additional shifts: If ordered by the Owner in writing, the Contractor shall work overtime, and/or add additional manpower and/or shifts:

**11.3.1** If the Contractor is not behind Schedule, the Owner will pay the Contractor the actual additional premium portion of the wages for overtime or additional shift work not included in the Contract price, but the Contractor shall not be entitled to Overhead and Profit.

**11.3.2** If the Contractor, through its sole or partial fault or neglect is behind Schedule, the Owner may order the Contractor, at the Contractor's expense, to increase its manpower or to work any overtime or additional shifts or take other action necessary to expedite the Work to meet the Project Schedule.

**11.3.3** If the Schedule is shown to be more than 21 Days behind in any critical activity, overtime, increase manpower and/or additional shifts shall be implemented immediately regardless of who is at fault. A disagreement over the cause of the impact will not relieve the Contractor from the obligation of complying with this Article. Once liability for the impact is determined, compensation will be determined in accordance with 11.3.1 or 11.3.2.

**11.3.4** The Owner reserves the right to suspend activity under Paragraph 11.3. Suspension shall be in writing and at the sole discretion of the Commissioner.

**11.4** Requisitions for partial payment will not be processed until the Contractor has complied with this requirement.

## **ARTICLE 12** **PREFERENCE IN EMPLOYMENT**

**12.1** Should this Contract be for the construction or repair of any building, then in the employment of labor to perform the Work specified herein, preference shall be given to citizens of the United States, who are, and continuously for at least three (3) months prior to the date hereof, have been residents of the labor market area, as established by the State of Connecticut Labor Commissioner, in which such Work is to be done, and if no such qualified person is available, then to citizens who have continuously resided in the county in which the Work is to be performed for at least three (3) months prior to the date hereof, and then to citizens of the state who have continuously resided in the State at least three months prior to the date hereof.

**12.** Should this Contract be for a Construction Services

Project other than for the construction, remodeling or repairing of public buildings covered by Connecticut General Statutes 31-52, then in the employment of mechanics, laborers or workmen to perform the Work specified herein, preference will be given to residents of the state who are, and continuously for at least six (6) months prior to the date hereof have been residents of this State, and if no such person is available then to residents of other states.

**12.3** The provisions of this Article shall not apply where the state or any subdivision thereof may suffer the loss of revenue granted or to be granted from any Agency or Department of the federal government as a result of this Article or regulations related thereto.

## **ARTICLE 13** **COMPENSATION FOR CHANGES IN THE WORK**

**13.1** At any time, without invalidating the Contract and by a written order and without notice to the sureties, the Owner, through the Construction Administrator, may order modifications in the Work consisting of additions, deletions or other revisions. Upon request, the Contractor shall supply the Construction Administrator promptly with a detailed proposal for the same, showing quantities of and Unit Prices for the Work and that of any Subcontractor involved.

**13.2** Modifications to the Work will be authorized by a written Change Order, or if necessary to expedite the Work, a written Construction Change Directive, issued by the Owner as provided for in Article 25. Change Orders and Construction Change Directives shall be processed in accordance with the terms of the Contract Documents. Upon receipt of the written Change Order, the Contractor shall proceed with the Work when and as directed.

**13.3** If a Change Order makes the Work less expensive for the Contractor, the proper deductions shall be made from the Contract Sum, said deductions to be computed in accordance with the provisions listed in this Article 13.

**13.4** The Contractor shall not be entitled to an extension of time if in the opinion of the Owner the Additional Work in conjunction with the Work can be performed without impact on the Contract Time.

**13.5** The Contractor may request, and the Owner may grant additional Contract Time when, in the opinion of the Owner, the Contractor has demonstrated that the Additional Work cannot be performed in conjunction with the Work without impact on the original Substantial Completion and/or Acceptance (if applicable) date.

**13.6** The amount of compensation to be paid to the Contractor for any Additional or Deleted Work that results in a Change Order shall be determined in one of the following manners:

**13.6.1** **AMOUNT OF COMPENSATION FOR CHANGE ORDER COSTS: LABOR, EQUIPMENT, BENEFITS AND MATERIAL:**

**13.6.1.1 Unit Price:** As stated in the Contract Documents.

**13.6.1.2 Unit Price:** As subsequently agreed upon by the Contractor and Owner

**13.6.1.3 Lump Sum:** Agreed upon sum by the Owner and the Contractor. The Owner may rely on costs, prices, and documentation provided by the Contractor or Subcontractor in agreeing to a Lump Sum. If the Owner believes that additional information is necessary to substantiate the accuracy of the cost, the Owner reserves the right to request and receive additional information from the Contractor. The Lump Sum must be based upon the following itemized costs:

**13.6.1.3.1 Labor:** (Contractor's or Subcontractor's own forces) No Change Order Proposal shall be negotiated if the request is solely for the increased labor rate over those originally carried by the Contractor in its original bid. Additional foreman hours shall not be included unless additional crews are added and/or a compensable time extension is granted. Project Executive time shall not be included as a direct cost as it is part of the overhead mark-up allowed. Project manager hours shall not be included unless a compensable time extension is granted.

**13.6.1.3.2 Material:** (Actual cost to the Contractor or Subcontractor) Cost shall not be based upon list pricing unless it reflects the actual prices being paid and no discounts or other offsets are being received by the Contractor or Subcontractor. No Change Order Proposal shall be negotiated if the request is solely for the escalation of material prices over those originally carried by the Contractor in its original bid.

**13.6.1.3.3 Benefits:** (The established rates of the following benefit costs inherent to the particular labor involved):

- 13.6.1.3.3.1** Workers Compensation.
- 13.6.1.3.3.2** Federal Social Security.
- 13.6.1.3.3.3** Connecticut Unemployment Compensation.
- 13.6.1.3.3.4** Fringe Benefits.

**13.6.1.4 Rented Equipment:** (Used directly on the Work and by the Contractor's or Subcontractor's own forces).

**13.6.1.5 Owned Equipment:** (Used directly on the Work and by the Contractor's or Subcontractor's own forces). Daily rate is not to exceed 3% of the monthly rental rate as identified by a nationally recognized construction cost estimating guide or service.

**13.6.1.6 Small Tools:**  
 Include items such as shovels, picks, rakes, ladders, and power tools which are expected to be utilized on a project. Trade related equipment, hand tools, and power tools normally supplied with the labor or are normally expected to be owned in the performance of the typical work for a trade are not compensable. These costs shall not be approved as part of the Direct Cost of a Change Order as they are included in the Contractor's overhead mark-up percentage.

**13.6.2 OVERHEAD AND PROFIT PERCENTAGES:** (Maximum allowable percentages applied to labor, equipment, and material)

**13.6.2.1** Contractor's mark-up for Work performed by its own forces:

Change Order Amount	Overhead and Profit
\$0 to \$ 5,000	20%
\$5,001 to \$15,000	17%
\$15,001 to \$25,000	15%
\$25,000 and greater	12%

**13.6.3 OVERHEAD AND PROFIT PERCENTAGES:** (Maximum allowable percentages applied to labor, equipment, benefits and material)

**13.6.3.1** Contractor's mark-up for Work performed by its Subcontractor's forces and not allowable for any subsidiary in which the Contractor has a majority ownership:

Change Order Amount	Overhead and Profit
\$0 and greater	6%

**13.6.4 OVERHEAD AND PROFIT PERCENTAGES:** (Maximum allowable percentages applied to labor, equipment, benefits and material) Subcontractor's mark-up for Work performed by its own forces:

Change Order Amount	Overhead and Profit
\$0 to \$ 5,000	20%
\$5,001 to \$15,000	17%
\$15,001 to \$25,000	15%
\$25,000 and greater	12%

**13.6.5 OVERHEAD AND PROFIT PERCENTAGES:** (Maximum allowable percentages applied to labor, equipment, benefits and material)

**13.6.5.1** Subcontractor's mark-up for Work performed by its Secondary Subcontractor's forces. Limited to one level (tier) below the Subcontractor and not allowable for any subsidiary in which the Subcontractor has a majority ownership.

Change Order Amount	Overhead and Profit
\$0 and greater	6%

**13.7 BOND COSTS**

**13.7.1** Actual additional bonding costs associated with the value of the Change Order will be compensable only when supported by written documentation by the bonding company that the Change Order requires an increase to the original Performance, Payment, Labor or Material Bond.

**13.7.2** The Contractor shall notify the bonding company at each \$500,000 increase to the contract value as the cumulative result of change orders. A copy of the Consent of Surety must be provided to the Owner prior to the execution of any change order which exceeds each cumulative \$500,000.

**13.8** Trade discounts, rebates, and amounts received from the sales by the Contractor of surplus materials and equipment shall accrue to the Owner.

**13.9** If the parties cannot agree upon a Lump Sum, then the Commissioner, through the Project Manager, may at the option of the Commissioner take the following action(s):

**13.9.1** Issue a Construction Change Directive for the Additional or Deleted Work. The amount of compensation shall be computed by the actual net costs to the Contractor determined by time and material or Unit Prices based upon the same information required in Subparagraphs 13.6.1.3.3.1 through 13.6.1.5:

**13.9.1.1 Labor:** (Contractor's or Subcontractor's own forces).

**13.9.1.2 Material:** (Used by Contractor's or Subcontractor's own forces).

**13.9.1.3 Benefits:** (The established rates of the following benefit costs inherent to the particular labor involved):

**13.9.1.3.1 Workers Compensation.**

**13.9.1.3.2 Federal Social Security.**

**13.9.1.3.3 Connecticut Unemployment Compensation.**

**13.9.1.3.4 Fringe Benefits.**

**13.9.1.4 Rented Equipment:** (Used directly on the Work and by the Contractor's or Subcontractor's own forces).

**13.9.1.5 Owned Equipment:** (Used directly on the Work and by the Contractor's or Subcontractor's own forces). Daily rate is not to exceed 3% of the monthly rental rate that can be identified by a nationally recognized construction cost estimating guide or service.

**13.9.2** Issue a Change Order adjusting the Contract Sum in the amount as determined by the Commissioner.

**13.10** For any Change Order or Construction Change Directive the Contractor shall, when requested, promptly furnish in a form satisfactory to the Construction Administrator and the Owner a complete detailed accounting of all costs relating to the Additional Work, including but not limited to certified payrolls and copies of accounts, bills and vouchers to substantiate actual costs. Further, the Owner reserves the right to access and make copies of the Contractor's records at any time upon written request from the Commissioner.

**13.11** Failure of the Contractor to negotiate in good faith issues of time and costs or failure to provide requested documentation within fourteen (14) Days, or a time period accepted by the Commissioner, shall constitute a waiver by the Contractor of any claim. In such cases the Owner may elect to issue a unilateral Change Order in an amount deemed to be fair and equitable by the Commissioner. The provisions hereof shall not affect the power of the Contractor to act in case of emergency, threatened injury to persons, or damage to Work on any adjoining property. In this case the Commissioner, through the Project Manager, shall issue a Change Order for such amount as the Commissioner finds to be reasonable cost of such Work.

#### **ARTICLE 14 DELETED WORK**

**14.1** Without invalidating any of the terms of the Contract, the Commissioner may order deleted from the Contract any items or portions of the Work deemed necessary by the Commissioner.

**14.2** The compensation to be deducted from the Contract Sum for such deletions shall be determined in the manner provided for under the provisions of Article 13 or in the event none of the provisions of Article 13 are applicable then by the value as estimated by the Owner.

#### **ARTICLE 15 MATERIALS: STANDARDS**

**15.1** Unless otherwise specifically provided for in the Specifications, all equipment, materials and articles incorporated in the Work are to be new and of the best grade of their respective kinds for the purposes. Wherever in the Contract Documents a particular brand, make of material, device, or equipment is shown or specified, the first manufacturer listed in the specification section is to be regarded as the standard. When the specification is proprietary and only one manufacturer is listed, the Contractor shall use the named manufacturer and no Substitutions or Equals will be allowed.

**15.2** Any other brand, make of material, device, equipment, procedure, etc. which is a deviation from the specified requirement is prohibited from use, but may be considered by the Owner for approval as an Equal or Substitution. The Contractor is to adhere to the specific requirements of the Contract Documents. Substitutions are discouraged and are only approved by the Commissioner as an exception.

#### **15.3 Submittals – Equals and Substitution Requests:**

**15.3.1** Substitution of Materials and Equipment before Bid Opening. The Owner will consider requests for Equals or Substitutions, if made prior to the receipt of the Bid. The information on all materials shall be consistent with the information herein.

**15.3.1.1** Statement of Variances – a statement of variances must list all features of the proposed Substitution which differ from the Drawings, Specifications and/or product(s) specified and must further certify that the Substitution has no other variant features. A request will be denied if submitted without sufficient evidence.

**15.3.1.2** Substitution Denial – any Substitution request not complying with the above requirements will be denied. Substitution request sent after the deadline established in the Notice to Bidder will be denied.

**15.3.1.3** An addendum shall be issued to inform all prospective Bidders of any accepted Substitution in accordance with Owner's addenda procedures.

**15.3.2 Substitution of Materials and Equipment After Bid Opening:** Subject to the Architect or Engineer's determination, if the material or equipment is Equal to the

one specified or pre-qualified and the CT DCS Project Manager's approval of such determination, Substitution of Material or Equipment may be allowed after the Letter of Award is issued only:

**15.3.2.1** If the specified or pre-qualified item is delayed by unforeseeable contingencies beyond the control of the Contractor which would cause a delay in the Project completion;

**15.3.2.2** If any specified or pre-qualified item is found to be unusable or unavailable due to a change by the manufacturer or other circumstances; or

**15.3.2.3** If the Contractor desires to provide a more recently developed material, equipment, or manufactured model from the same named manufacturer than the one specified or pre-qualified; or

**15.3.2.4** If the specified material and/or equipment inadvertently lists only a single manufacturer.

**15.4** Contractor shall submit each request for Equal or Substitution to the Architect or Engineer who shall review each request and make the following recommendations to the Owner:

**15.4.1** Acceptance or non-acceptance of the adequacy of the submission and required back-up,

**15.4.2** Determination of the category of the request for Substitution or Equal, and

**15.4.3** Overall recommendation for approval or rejection of the Substitution or Equal. The determination of the category as a Substitution may be grounds for an immediate rejection by the Owner.

**15.5** Approval of the Owner for each Equal or Substitution shall be obtained before the Contractor proceeds with the Work. The decision of the Commissioner, in this regard, shall be final and binding on the Contractor.

**15.6** No extension of time will be allowed for the time period required for consideration of any Substitution or Equal. No extension of time will be allowed and no responsibility will be assumed by the Owner when a Contractor submits a request for Substitution or Equal, whether such request be approved or denied, and the Contractor shall not be entitled to any claim for damages for delay.

**15.7** If the Contractor submits any request for an Equal or a Substitution, he shall bear the burden of proof that such requested Equal or Substitution meets the requirements of the Plans and Specifications.

**15.8** The Contractor shall purchase no materials or supplies for the Work which is subject to any chattel mortgage or which are under a conditional sale or other agreement by which an interest is retained by the seller. The Contractor warrants that the Contractor has good title to all materials and supplies used by him in the Work.

**15.9** All products and systems supplied to the State as a result of a purchase by a Contractor shall be certified that, to the best of the supplier's knowledge, there are no materials that are classified as hazardous materials being used within the assembly. Hazardous materials include, but are not limited

to, products such as asbestos, lead, and other materials that have proven to cause a health risk by their presence.

## **ARTICLE 16 INSPECTION AND TESTS**

**16.1** The purpose of the inspections will be to assure that the Work is performed in accordance with the Contract Documents. These inspections shall include, but not be limited to, all inspections and testing as required by the Owner, and any authorities have jurisdiction.

**16.2** All material and workmanship, if not otherwise designated by the Specifications, shall be subject to inspection, examination and test by the Commissioner at any and all times during manufacture and/or construction and at any and all places where such manufacture and/or construction is carried on. The Contract Documents additionally identify the parties responsible for performing and paying for the required testing and inspections. All required tests performed in a laboratory will be obtained and paid for by the Owner, except when the tests show the Work to be defective. The Contractor shall pay for all the costs associated with re-tests and re-inspections for all tests and inspections which fail. The Owner will issue a deduct Change Order to recover said retesting costs from the Contractor. All other tests, unless otherwise specified, shall be made at the Contractor's expense. Notice of the time of all tests to be made at the site shall be given to all interested parties, including the Owner.

**16.3** Without additional cost to the Owner, the Contractor shall promptly furnish facilities, labor and materials necessary to coordinate and perform operational tests and checkout of the Work. The Contractor shall furnish promptly all reasonable facilities, labor, and materials necessary to make all such testing safe and convenient.

**16.4** If, at any time before final payment and Acceptance of the Work, the Commissioner considers it necessary or advisable to examine of any portion of the Work already completed by removing or tearing out the same, the Contractor shall, upon request, furnish promptly all necessary facilities, labor, and materials. If such Work is found to be defective in any material respect, as determined by the Owner, because of a fault of the Contractor or any of the Contractor's Subcontractors, or if any Work shall have been covered without the approval or consent of the Commissioner (whether or not it is found to be defective), the Contractor shall be liable for testing costs and all costs of correction, including removal and/or demolition of the defective Work, including labor, material, and testing, including labor, material, re-testing or re-inspecting, services of required consultants, additional supervision, the Commissioner's and the Construction Administrator's administrative costs, and other costs for services of other consultants.

**16.5 Cost of Systems Commissioning Retesting:** The cost to retest a pre-functional or functional test, if the Contractor is responsible for the deficiency, shall be the Contractor's. If the Contractor is not responsible, any cost

recovery for retesting costs shall be negotiated with the Contractor.

**16.5.1** For a deficiency identified, not related to any pre-functional checklist or start-up fault, the following shall apply: The Commissioning Agent (CxA) and Construction Administrator will direct the retesting of the equipment once at no "charge" to the Contractor for their time. However, the Commissioning Agent's and Construction Administrator's time for additional testing will be charged to the Contractor.

**16.5.2** The time for the Systems Commissioning Agent and Construction Administrator to direct any retesting required because a specific pre-functional checklist or start-up test item, reported to have been successfully completed, but determined during functional testing to be faulty, will be back charged to the Contractor.

**16.5.3** Any required retesting by any Subcontractor shall not be considered a justified reason for a claim of delay or for a time extension by the Contractor.

#### **ARTICLE 17 ROYALTIES AND PATENTS**

**17.1** If the Contractor desires to use any design, device, material or process covered by a patent or copyright, the Contractor shall provide for such use by suitable legal agreement with the holder of said patent or copyright. The Contractor shall furnish a copy of this legal agreement to the Owner.

**17.2** The Contractor shall indemnify and hold harmless the Owner and Construction Administrator for any costs, expenses and damage which it may be obliged to pay by reason of any infringement of a patent or a copyright, at any time during the prosecution or after the Final payment of the Work.

#### **ARTICLE 18 SURVEYS, PERMITS AND REGULATIONS**

**18.1** Unless otherwise provided for, the Contractor shall furnish surveys necessary for the execution of the Work. The Owner will furnish the Contractor with two base lines and a benchmark.

**18.2** The Contractor shall obtain and pay for permits and licenses necessary for the execution of the Work and the occupancy and use of the completed Work.

**18.3** The Contractor shall give all notices and comply with all laws, ordinances, rules and regulations including building and fire safety codes relating to the performance of the Work.

**18.4** If underground utilities may be involved in part of the Work the Contractor is required to request "Call-Before-You-Dig" to verify the location of underground utilities at least (3) Working Days, as further defined under Paragraph 1.71 herein, prior to the start of any excavation. The Contractor shall also notify the Owner and Agency at least (3) Working Days prior to the start of any excavation. If "Call-Before-You-Dig" fails or refuses to respond to the Contractor's request, then the Contractor shall obtain the services of a qualified

underground utility locating firm, at no additional cost to the Owner, to verify locations of underground utilities prior to the start of any excavation. The Contractor shall be held responsible for providing safety, protecting the Work and protecting workmen as necessary to perform the Work. The Contractor shall be responsible for maintaining and protecting all original utility mark-out at no additional cost to the Owner.

#### **ARTICLE 19 PROTECTION OF THE WORK, PERSONS AND PROPERTY**

**19.1** The Contractor shall continuously and adequately protect the Work against damage from any cause, and shall protect materials and supplies furnished by the Contractor or Subcontractors, whether or not incorporated in the Work, and shall make good any damage unless it be due directly to errors in the Contract Documents or is caused by agents or employees of the Owner.

**19.2** To the extent required by law, by public authority, or made necessary in order to safeguard the health and welfare of the personnel or occupants of any of the state institutions, the Contractor shall adequately protect adjacent property and persons, and provide and maintain all facilities, including but not limited, to passageways, guard fences, lights, and barricades necessary for such protection.

**19.3** The Contractor shall take all necessary precautions for the safety of employees on the Work and shall comply with applicable provisions of federal and state safety laws and building codes to prevent accidents or injury to persons on, about, or adjacent to the premises where the Work is being performed. The Contractor shall also comply with the applicable provisions of the Associated General Contractors' "Manual of Accident Prevention in Construction", the standards of the Connecticut Labor Department and Occupational Safety and Hazard Association (OSHA).

**19.4** The Contractor shall erect and properly maintain at all times, as required by the conditions and progress of the Work, all necessary safeguards for the protection of employees of the State and the public, and shall post danger signs warning against any dangerous condition or hazard created by such things as protruding nails, well holes, elevator hatchways, scaffolding, window openings, excavations, tripping hazards or slipping, stairways and falling materials.

**19.5** The Contractor shall designate a qualified and responsible on-site staff person, whose duty shall be the prevention of accidents. The name and position of the designated person shall be reported to the Owner by the Contractor at the commencement of the Contract.

**19.6** The Contractor shall at all times protect excavations, trenches, buildings, and all items of Work from damage by rain, water from melted snow or ice, surface water run off and subsurface water usual for the vicinity at the time of operations; and provide all pumps and equipment and enclosures to insure such protection.

**19.7** The Contractor shall construct and maintain all necessary temporary drainage and provide all pumping necessary to keep excavation, basements, footings and foundations free of water.

**19.8** The Contractor shall remove all snow and ice as may be required for access to the site and proper protection and prosecution of the Work.

**19.9** The Contractor shall install bracing, shoring, sheathing, sheet piling, caissons and any other underground facilities as required for safety and proper execution of the Work, and shall remove this portion of the Work when no longer necessary.

**19.10** During cold weather the Contractor shall protect all Work from damage. If low temperature makes it impossible to continue operations safely in spite of cold weather precautions, the Contractor may cease Work upon the written approval of the Commissioner.

#### **ARTICLE 20** **TEMPORARY UTILITIES**

**20.1** Unless expressly provided for otherwise in the Contract Documents, the Contractor shall include in the proposed contract bid price as stated on the Bid Proposal Form, the costs of all temporary utilities required for Project completion and protection of the Work. Said temporary utilities include, but are not limited to, lighting, heating, cooling, electrical power, water, telephone, sanitary facilities, and potable water.

#### **ARTICLE 21** **CORRECTION OF WORK**

**21.1** The Contractor shall promptly and without expense to the Owner remove from the premises all materials rejected by or unacceptable to the Commissioner as failing to conform to the Contract Documents, whether incorporated in the Work or not.

**21.2** The Contractor shall promptly and without expense to the Owner replace any such materials, which do not conform to the Contract Documents, and shall bear the expense of making good all Work of other Contractors or Subcontractors destroyed or damaged by such removal or replacement.

**21.3** If the Contractor, after receipt of notice from the Owner, shall fail to remove such rejected or unacceptable materials within a reasonable time as fixed in said notice, the Owner may remove and store such materials at the expense of the Contractor.

**21.4** Such action shall not affect the obligation of the Contractor to replace and complete assembly and installation of the Work and to bear the expenses referred to above. Prior to the correction of rejected or unacceptable Work or if the Commissioner deems it inexpedient or undesirable to correct any portion of the Work which was rejected, deemed unacceptable, or not done in accordance with the Contract

Documents, the Contract Sum shall be reduced by such amount as, in the judgment of the Commissioner, shall be equitable.

**21.5** No extension of time will be given to the Contractor for correction of rejected or unacceptable Work. All significant punchlist Work shall be completed before Substantial Completion is determined. The remaining minor punchlist Work, as determined by the Commissioner, shall be completed within ninety (90) Days of established Substantial Completion date.

**21.6** Final Payment shall not relieve the Contractor of responsibility for the defects in material or workmanship.

**21.7** Unless expressly provided for otherwise in the Contract Documents, the Contractor shall remedy any rejected or unacceptable Work, and any Work found to be not conforming to the Contract Documents which is discovered within 18 Months after the date of Substantial Completion. The Contractor shall pay for any damage to other Work caused by such nonconforming Work or any damage created in correcting the nonconforming Work.

#### **ARTICLE 22** **GUARANTEES and WARRANTIES**

**22.1** Unless expressly provided for otherwise in the Contract Documents, the Contractor shall provide a Warranty on the Work for an 18-Month period from the date of Substantial Completion. The Contractor shall warrant that the equipment, materials and workmanship are of good quality and new, unless permitted elsewhere by the Contract Documents, and that the Work shall be free from defects not inherent in the quality required or permitted and that the Work conforms to the Contract Documents.

**22.2** Disclaimers and limitations from manufactures, Subcontractors, suppliers or installers to the Contractor shall not relieve the Contractor of the Warranty on the Work. The Contract Documents detail the related damages, reinstatement of Warranty, replacement cost and Owner's recourse.

#### **ARTICLE 23** **CUTTING, FITTING, PATCHING, AND DIGGING**

**23.1** The Contractor will perform or will cause the Subcontractors to perform all cutting, fitting, or patching of the portion(s) of the Work that may be required to make the several parts thereof joined and coordinated in a manner satisfactory to the Commissioner and in accordance with the Plans and Specifications.

**23.2** The responsibility for defective or ill-timed Work shall be with the Contractor, but such responsibility shall not in any way relieve the Subcontractor who performed such Work. Except with the consent of the Commissioner, neither the Contractor nor any of its Subcontractors shall cut or alter the Work of any other Contractor or Subcontractor.



**ARTICLE 24  
CLEANING UP**

**24.1** The Contractor shall, on a daily basis, keep the premises free from accumulations of waste material or rubbish.

**24.2** Prior to Acceptance of the Work, the Contractor shall remove from and about the site of the Work, all rubbish, all temporary structures, tools, scaffolding, and surplus materials, supplies, and equipment which may have been used in the performance of the Work. If the Commissioner in his sole discretion determines that the Contractor has failed to clean the work site, the Owner may remove the rubbish and charge the cost of such removal to the Contractor. A deduct Change Order will be issued by the Owner to recover such cost.

**ARTICLE 25  
ALL WORK SUBJECT TO CONTROL OF THE  
COMMISSIONER**

**25.1** The Commissioner hereby declares that the CT DCS Project Manager is the Commissioner's only authorized representative to act in matters involving the Owner's, and/or Architect's or Engineer's, ability to revoke, alter, enlarge or relax any requirement of the Contract Documents; to settle disputes between the Contractor and the Construction Administrator; and act on behalf of the Commissioner. In all such matters, the provisions of Articles 13 and 14 herein shall guide the CT DCS Project Manager.

**25.2** In no event may the Contractor act on any instruction of the Agency without written consent of the Owner. In the event the Contractor acts without such consent, he does so at his own risk and at his own expense, not only for the Work performed, but for the removal of such Work as determined necessary by the Commissioner.

**25.3** In the performance of the Work, The Contractor shall abide by all orders, directions, and requirements of the Commissioner at such time and places and by such methods and in such manner and sequence as the Commissioner may require.

**25.4** The Commissioner shall determine the amount, quality, acceptability and fitness of all parts of the Work, shall interpret the plans, Specifications, Contract Documents and extra work orders and shall decide all other questions in connection with the Work.

**25.5** The Contractor shall employ no plant, equipment, materials, methods, or persons to which the Commissioner objects and shall remove no plant materials, equipment, or other facilities from the site of the Work without the permission of the Commissioner. Upon request, the Commissioner shall confirm in writing any oral order, direction, requirement or determination.

**25.6** In accordance with Section 4b-24 of the Connecticut General Statutes, the public auditors of the State of Connecticut and the auditors or accountants of the

Commissioner of Construction Services shall have the right to audit and make copies of the books of any Contractor employed by the Commissioner.

**ARTICLE 26  
AUTHORITY OF THE CONSTRUCTION  
ADMINISTRATOR**

**26.1** The Construction Administrator employed by the Commissioner is authorized to inspect all Work for conformance to the Contract Documents. The Construction Administrator is authorized to reject all Work found to be defective, unacceptable and nonconforming to the Contract Documents. Such inspections and rejections may extend to all or any part of the Work, and to the preparation or manufacture of the material to be used.

**26.2** The Construction Administrator is not empowered to revoke, alter, enlarge, or relax any requirements of the Contract Documents, or to issue instructions contrary to the Contract Documents. The Construction Administrator shall in no case act as foreman or perform other duties for the Contractor, nor shall the Construction Administrator interfere with the management of the Work by the Contractor. Any advice, which the Construction Administrator may give the Contractor, shall in no way be construed as binding the Commissioner or Owner in any way, nor releasing the Contractor from the fulfillment of the terms of the Contract.

**26.3** In any dispute arising between the Contractor and the Construction Administrator with reference to inspection and rejection of the Work, the Construction Administrator may suspend Work on the non-compliant portion of the Work until the dispute can be referred to and decided by the Commissioner.

**ARTICLE 27  
SCHEDULE OF VALUES,  
APPLICATION FOR PAYMENT**

**27.1** Immediately after the signing of the Contract, the Contractor shall furnish for the use of the Commissioner, as a basis for estimating partial payments, a certified Schedule of Values, totaling the Contract Sum and broken down into quantities and unit costs, as outlined in the Contract Documents and as directed by the Owner. The Schedule of Values must reflect true costs and be in sufficient detail to be an effective tool for monitoring the progress of the Work Upon request of the Commissioner; the Contractor shall supply copies of signed Contracts, vendor quotations, etc. as back up to the Schedule of Values.

**27.2** Approval of the Schedule of Values by the Commissioner is required prior to any payment by the Owner.

**27.3** The Schedule of Values shall include a breakdown of the Contractor's general condition costs.

**27.3.1** Non-recurring costs, (i.e. Mobilization costs, utility hook-ups, temporary heat) will be paid at the time of occurrence.

**27.3.2** Reoccurring costs will be paid in proportion to the percent of completion of the Project.

**27.3.3** Further detail can be found in the General Requirements 01.29.76; paragraphs 1.3.B.4 for this project.

**27.4** The Schedule of Values shall include a breakdown of Contract closeout costs including systems certification testing and acceptance, training, Warranties, Guarantees, As-Built Drawings and attic stock.

**27.5** The Contractor shall make periodic applications for payment, which shall be subdivided into categories corresponding with the approved Schedule of Values and shall be in such numbers of copies as may be designated by the Commissioner.

### **ARTICLE 28 PARTIAL PAYMENTS**

**28.1** Commissioner will examine the Contractor's Applications For Payments to determine, in the opinion of the Commissioner, the amounts that properly represent the value of the Work completed and the materials suitably stored on the site.

**28.2** In making such Application For Payment for the Work, there shall be deducted **seven** and **one-half** percent (7.5%) of the amount of each Application for Payment to be retained by the Owner as Retainage until Final Completion.

**28.2.1** The Commissioner has the sole discretion in the determination of reduction in Retainage. At fifty percent (50%) completion of the Work the Owner shall issue a "Contractor's Performance Evaluation". If the Contractor receives a performance evaluation score of "Good" or better, then the Retainage withheld may be reduced to five percent (5%). All subsequent Applications for Payment shall be subject to five percent (5%) Retainage. Upon Substantial Completion, the Retainage may be reduced at the request of the Contractor and recommendation of the CT DCS Project Manager. In the event of a reduction in Retainage to below five percent (5%), the minimum Retainage withheld shall not be less than the CT DCS Project Manager's estimate of the remaining Work or two and one-half percent (2.5%), which ever is greater. All requests for Retainage Reduction shall be done on CT DCS Form 7048 General Contractor Retainage Reduction Request, which can be found at the end of the General Conditions.

**28.2.2** Subsequent to Substantial Completion, in limited circumstances, at the sole discretion of the Commissioner, a reduction of Retainage below Two and one-half percent (2.5%) may be considered.

**28.2.3** A "Good" Contractor's Performance Evaluation score shall be defined as a minimum total score of sixty percent (60%).

**28.3** The decision of the Commissioner to reduce the Retainage rate will be based upon the Contractor's Performance Evaluation score for completed portions of the

Work as set out above and other factors that the Commissioner may find appropriate as follows:

**28.3.1** The Contractor's timely submission of an appropriate and complete CPM Schedule or Construction Schedule and Schedule of Values, in compliance with the Contract requirements and the prompt resolution of the Owner's and/or Architect's or Engineer's comments on the submitted material resulting in an appropriate basis for progress of the Work.

**28.3.2** The Contractor's timely and proper submission of all Contract Document required submissions: including, but not limited to, Shop Drawings, material certificates and material samples and the prompt resolution of the Owners and/or Architect's or Engineer's comments on the submitted material, resulting in an appropriate progress of the Work.

**28.3.3** The Contractor's provision of proper and adequate supervision and home office support of the Project.

**28.3.4** The Work completed to date has been installed or finished in a manner acceptable to the Owner.

**28.3.5** The progress of the Work is consistent with the approved CPM Schedule or Construction Schedule.

**28.3.6** All approved credit change orders have been invoiced.

**28.3.7** All Change Order requests for pricing are current.

**28.3.8** The Contractor has and is maintaining a clean worksite in accordance with the Contract Documents.

**28.3.9** All Subcontractor payments are current at the time of reduction request.

**28.3.10** Contractor is compliant with set-aside provisions of the contract.

**28.3.2.11** Pursuant to C.G.S. Sec. 4a-101, the General 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 General Contractor shall complete and submit to the State of Connecticut Department of Construction Services (CT DCS) evaluations of each such subcontractor upon fifty percent (50%) completion of the project and upon Substantial Completion of the project. The General 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 General Contractor.

**28.4** No payments will be made for improperly stored or protected materials or unacceptable Work.

**28.5** At his or her sole discretion, the Commissioner may allow to be included in the monthly requisitions payment requests for materials and equipment stored off the site.

**28.5.1** In the event the Commissioner allows the Contractor to include in its requisitions payment requests for materials and equipment stored off the site, the Contractor shall also submit any additional bonds and/or insurance certificates relating to off-site stored materials

and equipment, and follow such other procedures as may be required by the State to obtain the Commissioner's approval of such requests.

**28.5.2** The Architect or Engineer, or Construction Administrator shall have inspected said materials and equipment and recommended payment therefore. The Contractor shall pay for the cost of the Architect's or Engineer's, or Construction Administrator's time and expense in performing these inspection services.

**ARTICLE 29**  
**DELIVERY OF STATEMENT SHOWING**  
**AMOUNTS DUE FOR WAGES, MATERIALS, AND**  
**SUPPLIES**

**29.1** For each Application for Payment under this Contract, the Owner reserves the right to require the Contractor and every Subcontractor to submit a written verified statement, in a form satisfactory to the Owner, showing in detail all amounts then due and unpaid by such Contractor or Subcontractor for daily or weekly wages to all laborers employed by it for the performance of the Work or to other persons for materials, equipment or supplies delivered at the site.

**29.2** The term "laborers" as used herein shall include workmen, workwomen, and mechanics.

**29.3** Failure to comply with this requirement may result in the Owner withholding the Application for Payment pursuant to Article 28.

**ARTICLE 30**  
**SUBSTANTIAL COMPLETION AND ACCEPTANCE**

**30.1 Substantial Completion:**

**30.1.1** When the Contractor considers that the Work or a portion thereof is Substantially Complete, the Contractor shall request an inspection of said Work in writing to the Construction Administrator. The request shall certify that the Contractor has completed its own inspection prior to the request and that the Contractor is compliant with all requirements of Section 01 77 00 of the General Requirements. The request must also include a statement that a principal or senior executive of the Contractor is ready, willing and able to attend a walk through inspection with the Architect or Engineer.

**30.1.2** Upon receipt of the request, the Architect or Engineer, Construction Administrator and Owner, will make an inspection to determine if the Work or designated portion thereof is Substantially Complete. A principal or senior executive of the Contractor shall accompany the Architect or Engineer during each inspection/re-inspection. If the inspection discloses any item, whether or not included on the inspection list, which is not in accordance with the requirements of the Contract Documents, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item.

**30.1.3** The Contractor shall then submit a request for another inspection. The determination of Substantial Completion is solely within the discretion of the Owner. Any

costs for re-inspection beyond one, shall be at the expense of the Contractor and such costs will be recovered by issuance of a credit Change Order. When the Work or designated portion thereof is determined to be Substantially Complete, the Contractor will be provided a Certificate of Substantial Completion from the Owner. The Certificate of Substantial Completion shall establish the date when the responsibilities of the Contractor for security, maintenance, heat, utilities, damage to the Work, and insurance, are transferred to the Owner and shall fix the time within which the Contractor shall finish all items on the inspection list accompanying the Certificate. If the punch list is not complete in 90 Days, the Owner reserves the right to complete the outstanding punch list items with their own forces or by awarding separate contracts and to deduct the cost thereof from the amounts remaining due to the Contractor.

**30.1.4** The Certificate of Substantial Completion shall be signed by the Construction Administrator, Owner, and Architect or Engineer. Upon Substantial Completion of the Work or designated portion thereof and upon application by the Contractor and certification by the Construction Administrator and Architect or Engineer, the Owner shall make payment reflecting adjustment in Retainage, if any, for such Work or portion thereof as provided in the Contract Documents.

**30.2 Acceptance:**

**30.2.1** Upon completion of the Work, the Contractor shall forward to the Construction Administrator a written notice that the Work is ready for inspection and Acceptance.

**30.2.2** When the Work has been completed in accordance with terms and conditions of the Contract Document as determined by the Owner a Certificate of Acceptance shall be issued by the Owner.

**ARTICLE 31**  
**FINAL PAYMENT**

**31.1** The Owner reserves the right to retain for a period of thirty (30) Days after filing of the Certificate of Acceptance the amount therein stated less all prior payments and advances whatsoever to or for the account of the Contractor.

**31.2** All prior estimates and payments, including those relating to extra or additional Work, shall be subject to correction by the Final Payment.

**31.3** No Application for Payment, Final or Partial, shall act as a release to the Contractor or the Contractor's sureties from any obligations under this Contract.

**31.4** The Architect or Engineer and Construction Administrator will promptly issue the Certificate for Payment, stating that to the best of their knowledge, information and belief, and on the basis of their observations and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor and noted in said Final Payment is due and payable.

**31.5** Final Payment shall not be released until a Certificate of Acceptance and a Certificate of Compliance have been issued.

**31.6** Neither Final Payment nor any Retainage shall become due until the Contractor submits to the Owner the following:

**31.6.1** An affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied.

**31.6.2** A certificate evidencing that insurance required by the Contract Documents to remain in force after Final Payment is currently in effect and will not be canceled or allowed to expire without at least 30 Days prior written notice to the Owner.

**31.6.3** A written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents.

**31.6.4** Written consent of surety, if any, to Final Payment.

**31.6.5** If required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorney's fees.

### **ARTICLE 32**

#### **OWNER'S RIGHT TO WITHHOLD PAYMENTS**

**32.1** The Commissioner may withhold a portion of any Payment due the Contractor that may, in the judgment of the Commissioner, be necessary:

**32.1.1** To assure the payment of just claims then due and unpaid to any persons supplying labor or materials for the Work.

**32.1.2** To protect Owner from loss due to defective, unacceptable or non-conforming Work not remedied by the Contractor.

**32.1** To protect the Owner from loss due to injury to persons or damage to the Work or property of other Contractors, Subcontractors, or others caused by the act or neglect of the Contractor or any of its Subcontractors.

**32.2** The Owner shall have the right to apply any amount withheld under this Article as the Owner may deem proper to satisfy protection from claims. The amount withheld shall be considered a payment to the Contractor.

**32.3** The Owner has the right to withhold payment if the Contractor fails to provide accurate submissions of Submittals,

up date the status including but not limited to the following: As-Built Drawings, request for information (RFI) log, Schedule, submittal log, Change Order log, certified payrolls and daily reports and all other requirement of the Contract Documents.

**32.4** If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorney's fees.

### **ARTICLE 33**

#### **OWNER'S RIGHT TO STOP WORK OR TERMINATE CONTRACT**

**33.1** The Commissioner shall have the authority to suspend the Work wholly or in part, for such period or periods as the Commissioner considers being in the best interests of the State, or in the interests of public necessity, convenience or safety. During such periods the Contractor shall store all materials and equipment, in such a manner to prevent the materials and equipment from being damaged in any way, and the Contractor shall take precautions to protect the Work from damage.

**33.1.1** If the Commissioner, in writing, orders the performance of all or any portion of the Work to be suspended or delayed for an unreasonable period of time (i.e. not originally anticipated, customary, or inherent in the construction industry) and the Contractor believes that additional compensation and/or Contract Time is due as a result of such suspension or delay, the Contractor shall submit to the Commissioner in writing a request for a Contract adjustment within 7 Days of receipt of the notice to resume Work. The request shall set forth the specific reasons and support for said adjustment.

**33.1.2** The Commissioner shall evaluate any such requests received. If the Commissioner agrees that the cost and/or time required for the performance of the Contract has increased as a result of such suspension and that the suspension was caused by conditions beyond the control of and not the fault of the Contractor, its suppliers, or Subcontractors, and was not caused by weather, then the Commissioner will make a reasonable adjustment, excluding profit, of the Contract terms. The Commissioner will notify the Contractor of the determination as to what adjustments of the Contract, if any, that the Commissioner deems warranted.

**33.1.3** No Contract adjustment will be made unless the Contractor has submitted the request for adjustment within the time prescribed.

**33.1.4** No Contract adjustment will be made under this Article to the extent that performance would have been suspended or delayed by any other cause within the Contractor's control or by any factor for which the Contractor is responsible under the Contract; or that such an adjustment is provided for or excluded under other term or condition of this Contract.

**33.2** Notwithstanding any provision or language in the

Contract to the contrary, the State may terminate the Contract whenever the Commissioner determines at his sole discretion that such termination is in the best interests of the State. Any such termination shall be effected by delivery to the Contractor of a written Notice of Termination specifying the extent to which performance of Work under the Contract is terminated, and the date upon which such termination shall be effective.

**33.2.1** In the event of such termination, the Contractor shall be entitled to reasonable compensation as determined by the Commissioner, however, no claim for lost Overhead or profits shall be allowed.

**33.2.2** All Work and materials obtained by the Contractor for the Work, that have been incorporated into the Work, inspected, tested as required, accepted by the Commissioner, and paid for by the State, shall become the property of the State.

**33.2.3** Materials obtained by the Contractor for the Work that have been inspected, tested as required, and accepted by the Commissioner, and that are not incorporated into the Work, shall, at the option of the Commissioner, be purchased from the Contractor at actual cost as shown by receipted bills. To this cost shall be added all actual costs for delivery at such points of delivery as may be designated by the Commissioner, as shown by actual cost records.

**33.2.4** Termination of the Contract shall not relieve the Contractor or its Surety of their responsibilities for the completed Work, nor shall it relieve the Contractor's Surety of its obligations to ensure completion of the Work and to pay legitimate claims arising out of Work.

#### **ARTICLE 34**

##### **SUBLETTING OR ASSIGNING OF CONTRACT**

**34.1** The Contract or any portion thereof, or the Work provided for therein, or the right, title, or interest of the Contractor therein may not be sublet, sold, transferred, assigned, or otherwise disposed of to any person, firm, or corporation without the written consent of the Commissioner.

**34.2** No person, firm, or corporation other than the Contractor to whom the Contract was awarded shall be permitted to commence Work at the site of the Contract until such consent has been granted.

#### **ARTICLE 35**

##### **CONTRACTOR'S INSURANCE**

**35.1** The Contractor shall not start Work under the Contract until they have obtained insurance as stated in SECTIONS 00 62 16 CERTIFICATE OF INSURANCE and 00 40 13 BID PROPOSAL FORM, subsections 4.4.2 and 4.4.3, of the Project Manual and until the insurance has been approved by the Owner. The Contractor shall not allow any Subcontractor to start Work until the same insurance has been obtained by the Subcontractor and approved by the Owner or the Contractor's insurance provides coverage on behalf of the Subcontractor. The Contractor shall send Certificates of Liability Insurance to the Bidding and Contracts Unit, Department of Construction Services, 165 Capitol Avenue, Room G-35, Hartford, CT 06106 unless otherwise directed in

writing. Presented below is a narrative summary of the insurance required.

**35.1.1 Commercial General Liability** Insurance including contractual liability, products/completed operations, broad form property damage and independent Contractors. The limits shall be no less than \$1,000,000 each occurrence and \$2,000,000 annual aggregate. Coverage for hazards of explosion, collapse and underground (X-C-U) and for asbestos abatement when applicable to this Contract, must also be included when applicable to the Work to be performed. The State of Connecticut, the Department of Construction Services, and their respective officers, agents, and employees shall be named as an Additional Insured. This coverage shall be provided on a primary basis.

**35.1.2 Owner's and Contractor's Protective Liability** insurance providing a total limit of \$1,000,000 for all damages arising out of bodily injury or death of persons in any one accident or occurrence and for all damages arising out of injury or destruction of property in any one accident or occurrence and subject to a total (aggregate) limit of \$2,000,000 for all damages arising out of bodily injury to or death of persons in all accidents or occurrences and out of injury to or destruction of property during the policy period. This coverage shall be for and in the name of the State of Connecticut.

**35.1.3 Automobile Liability** The operation of all motor vehicles including those owned, non-owned and hired or used in connection with the Contract shall be covered by Automobile Liability insurance providing for a total limit of \$1,000,000 for all damages arising out of bodily injuries to or death of all persons in any one accident or occurrence and for all damages arising out of injury to or destruction of property in any one accident or occurrence. In cases where an insurance policy shows an aggregate limit as part of the automobile liability coverage, the aggregate limit must be at least \$2,000,000. This coverage shall be provided on a primary basis. Should the Contractor not own any automobiles, the automobile & liability requirement shall be amended to allow the Contractor to maintain only hired and non-owned liability coverage.

**35.1.4 Excess Liability** (Other than Umbrella Form) insurance in the amount of \$5,000,000 for bids of \$1,000,000 - \$10,000,000 and in the amount of \$10,000,000 for bids of \$10,000,001 - \$20,000,000. Refer to Section 00 92 00 Amendments of the Project Manual for Excess Liability insurance requirements for bids exceeding \$20,000,000.

**35.1.5 Workers' Compensation and Employer's Liability** as required by Connecticut Law and **Employers' Liability** with a limit of not less than \$100,000 per occurrence, \$500,000 disease policy limit and \$100,000 disease each employee. When Work is on or contiguous to navigable bodies of waterways and ways adjoining, the Contractor shall include the Federal Act endorsement for the U.S. Longshoremen's and Harbor Workers Act.

**35.1.6 Special Hazards Insurance**, if required, will be stated in SECTION 00 40 13 BID PROPOSAL FORM, subsection 4.4.2 of this Project Manual. This includes coverage for explosion, collapse or underground damage and for asbestos abatement when applicable to this Contract and shall be no less than \$1,000,000 each occurrence.

**35.1.7 Builder's Risk Insurance**, if required, will be stated in Section 00 40 13 Bid Proposal Form, subsection 4.4.3 of this Project Manual.

**35.1.8 Inland Marine/Transit Insurance:** With respect to property with values in excess of \$100,000 which is rigged, hauled or situated at the site pending installation, the Contractor shall maintain inland marine/transit insurance provided the coverage is not afforded by a Builder's Risk policy.

**35.1.9** When required to be maintained, the Builder's Risk and/or Inland Marine/Transit Insurance policy shall endorse the State of Connecticut as a Loss Payee and the policy shall state it is for the benefit of and payable to the State of Connecticut.

**35.2 Satisfying Limits Under an Umbrella Policy:** If necessary, the Contractor may satisfy the minimum limits required above for either Commercial General Liability, Automobile Liability, and Employer's Liability coverage under an Umbrella or Excess Liability policy. The underlying limits may be set at the minimum amounts required by the Umbrella or Excess Liability policy provided the combined limits meet at least the minimum limit for each required policy. The Umbrella or Excess Liability policy shall have an Annual Aggregate at a limit not less than two (2) times the highest per occurrence minimum limit required above for any of the required coverages. The State of Connecticut shall be specifically endorsed as an Additional Insured on the Umbrella or Excess Liability policy, unless the Umbrella or Excess Liability policy provides continuous coverage to the underlying policies on a complete "Follow-Form" basis.

**35.3** The Contractor shall, at its sole expense, maintain in full force and effect at all times during the life of the Contract or the performance of Work hereunder, insurance coverage as described herein. Certificates shall include a minimum thirty (30)-day endeavor to notify requirement to the Owner prior to any cancellation or non-renewal.

**35.4** The Contractor shall be fully and solely responsible for any costs or expenses as a result of a coverage deductible, coinsurance penalty, or self-insured retention, including any loss not covered because of the operation of such deductible, coinsurance penalty, or self-insured retention.

**35.5** The requirement contained herein as to types and limits of insurance coverage to be maintained by the Contractor are not intended to and shall not in any manner limit or qualify the liabilities and obligations assumed by the Contractor.

**35.6 Hold Harmless Provisions:** The Contractor shall at all times indemnify and save harmless the State of Connecticut, the Department of Construction Services, and their respective officers, agents, and employees, on account of any and all claims, damages, losses, litigation, expenses, counsel fees and compensation arising out of injuries (including death) sustained by or alleged to have been sustained by the officers, agents, and employees of said State or Department, or of the Contractor, his Subcontractor, or materialmen and from injuries (including death) sustained by or alleged to have been sustained by the public, any or all persons on or near the Work, or by any other person or property, real or personal (including property of said State or Department) caused in whole or in part by the acts, omissions, or neglect or the Contractor including, but not limited to, any neglect in safeguarding the Work or through the use of unacceptable materials in constructing the Work of the Contractor, any Subcontractor, materialman, or anyone directly employed by them or any of them while engaged in the performance of the Contract, including the entire elapsed time from the date of the Notice to Proceed or the actual Commencement Of The Work whichever occurs first until its completion as certified by the Department of Construction Services.

## **ARTICLE 36 FOREIGN MATERIALS**

**36.1** Preference shall be given to articles or materials manufactured or produced in the United States, Canada, and Mexico, (the members of the North American Free Trade Agreement (NAFTA)); and the products shall meet all of the referenced standards and Specifications for conditions of performance, quality, and price with duty being equal.

**36.2** Only articles or materials manufactured or produced in the United States, Canada, and Mexico, (the members of the North American Free Trade Agreement (NAFTA)), will be allowed. The foregoing provisions shall not apply to foreign articles or materials required by the Contract Documents.

## **ARTICLE 37 HOURS OF WORK**

**37.1** No person shall be employed to work or be permitted to work more than eight (8) hours in any Day or more than forty (40) hours in any week for any Work provided in the Contract, in accordance with Connecticut General Statute Section 31-57.

**37.2** The operation of such limitation of hours of work may be suspended during an emergency, upon the approval of the Commissioner, in accordance with Connecticut General Statute Section 31-57.

## **ARTICLE 38 CLAIMS**

**38.1 General:** When filing a formal claim under Section 4-61 (referred to as "Section 4-61" below) of the Connecticut

General Statutes (as revised), either as a lawsuit in the Superior Court or as a demand for arbitration, the Contractor must follow the procedures and comply with the requirements set forth in this Article. This Section does not, unless so specified, govern informal claims for additional compensation which the Contractor may bring before the Department. The Contractor should understand, however, that the Department may need, before the Department can resolve such a claim, the same kinds of documentation and other substantiation that it requires under this Article. It is the intent of the Department to compensate the Contractor for actual increased costs caused by or arising from acts or omissions on the part of the Department that violate legal or contractual duties owed to the Contractor by the Department.

**38.2 Notice of Claim:** Whenever the Contractor intends to file a formal claim against the Department under Section 4-61, seeking compensation for additional costs, the Contractor shall notify the Commissioner in writing (in strict compliance with Section 4-61) of the details of said claim. Such written notice shall contain all pertinent information described in Paragraph 38.5 below.

Once formal notice of a claim under Section 4-61(b) (as revised) has been given to the Commissioner, the claimant may not change the claim in any way, in either concept or monetary amount, (1) without filing a new notice of claim and demand for arbitration to reflect any such change, and (2) without the minimum period of six months after filing of the new demand commencing again and running before any hearing on the merits of the claim may be held. The only exception to this limitation will be for damages that continue to accrue after submission of the notice, in ways described and anticipated in the notice.

**38.3 Record Keeping:** The Contractor shall keep daily records of all costs incurred in connection with its Work on behalf of the Department. The daily records shall identify each aspect of the Project affected by matters related to any claim for additional compensation that the Contractor has filed, intends to file, or has reason to believe that it may file against the Department; the specific Project locations where Project work has been so affected; the number of people working on the affected aspects of the Project at the pertinent time(s); and the types and number of pieces of equipment on the Project site at the pertinent time(s). Any potential or anticipated effect on the Project's progress or Schedule which may result in a claim by the Contractor shall be noted contemporaneously with the cause of the effect, or as soon thereafter as possible.

**38.4 Claim Compensation:** The payment of any claim, or any portion thereof, that is deemed valid by the Department shall be made in accordance with the following provisions of this Article:

**38.4.1 Compensable Items:** The liability of the Department for claims will be limited to the following specifically identified items of cost, insofar as they have not otherwise been paid for by the Department, and insofar as they were caused solely by the actions or omissions of the Department or its agents (except that with regard to payment for extra work, the Department will pay to the Contractor the Overhead and profit percentages provided for in Article 13.):

**38.4.1.1** Additional Project-site labor expenses.

**38.4.1.2** Additional costs for materials.

**38.4.1.3** Additional, unabsorbed Project-site Overhead (e.g., for mobilization and demobilization).

**38.4.1.4** Additional costs for active equipment.

**38.4.1.5** For each Day of Project delay or suspension caused solely by actions or omissions of the Department either:

**38.4.1.5.1** an additional ten percent (10%) of the total amount of the costs identified in Subparagraphs 38.4.1.1 through 38.4.1.4 above; except that if the delay or suspension period prevented the Contractor from incurring enough Project costs under Subparagraphs 38.4.1.1 through 38.4.1.4 during that period to require a payment by the Department that would be greater than the payment described in Subparagraph 38.4.1.5.2 below, then the payment for affected home office Overhead and profit shall instead be made in the following *per diem* amount :

**38.4.1.5.2** six percent (6%) of the original total Contract amount divided by the original number of Days of Contract Time. Payment under either 38.4.1.5.1 or 38.4.1.5.2 hereof shall be deemed to be complete and mutually satisfactory compensation for any unabsorbed home office overhead and any profit related to the period of delay or suspension.

**38.4.1.6** Additional equipment costs. Only actual equipment costs shall be used in the calculation of any compensation to be made in response to claims for additional Project compensation. Actual equipment costs shall be based upon records kept in the normal course of business and in accordance with generally accepted accounting principles. Under no circumstances shall Blue Book or other guide or rental rates be used for this purpose (unless the Contractor had to rent the equipment from an unrelated party, in which case the actual rental charges paid by the Contractor, so long as they are reasonable, shall be used). Idle equipment, for instance, shall be paid for based only on its actual cost to the Contractor.

**38.4.1.7** Subcontractor costs limited to, and determined in accordance with, Subparagraphs 38.4.1.1 through 38.4.1.5 above and applicable statutory and case law. Such Subcontractor costs may be paid for by the Department only: (a) in the context of an informal claims settlement; or (b) if the Contractor has itself paid or legally assumed, present unconditional liability for those Subcontractor costs.

**38.4.2 Excusable But Not Compensable Items:** The Contractor may be allowed Days but the Department will have no liability for the following non-compensable items:

**38.4.2.1** Abnormal or unusually severe weather

**38.4.2.2** Acts of God

**38.4.2.3** Force Majeure

**38.4.2.4** Concurrent Delay

**38.4.3 Non-Compensable Items:** The Department will have no liability for the following specifically-identified non-compensable items:

- 38.4.3.1** Profit, in excess of that provided for herein.
- 38.4.3.2** Loss of anticipated profit.
- 38.4.3.3** Loss of bidding opportunities.
- 38.4.3.4** Reduction of bidding capacity.
- 38.4.3.5** Home office overhead in excess of that provided for in Subparagraph 38.4.1.5 hereof.
- 38.4.3.6** Attorneys fees, claims preparation expenses, or other costs of claims proceedings or resolution.
- 38.4.3.7** Subcontractor failure to perform
- 38.4.3.8** Any other consequential or indirect expenses or costs, such as tort damages, or any other form of expense or damages not provided for in these specifications or elsewhere in the Contract.

**38.5 Required Claim Documentation:** All claims shall be submitted in writing to the Commissioner, and shall be sufficient in detail to enable the Department to ascertain the basis and the amount of each claim, and to investigate and evaluate each claim in detail. As a minimum, the Contractor must provide the following information for each and every claim and sub-claim asserted:

- 38.5.1** detailed factual statement of the claim, with all dates, locations and items of Work pertinent to the claim.
- 38.5.2** A statement of whether each requested additional amount of compensation or extension of time is based on provisions of the Contract or on an alleged breach of the Contract. Each supporting or breached Contract provision and a statement of the reasons why each such provision supports the claim must be specifically identified or explained.
- 38.5.3** Excerpts from manuals or other texts which are standard in the industry, if available, that support the Contractor's claim.
- 38.5.4** The details of the circumstances that gave rise to the claim.
- 38.5.5** The date(s) on which any and all events resulting in the claim occurred, and the date(s) on which conditions resulting in the claim first became evident to the Contractor.
- 38.5.6** Specific identification of any pertinent document, and detailed description of the substance of any material oral communication, relating to the substance of such claim.
- 38.5.7** If an extension of time is sought, the specific dates and number of Days for which it is sought, and the basis or bases for the extension sought. A critical path method, bar chart, or other type of graphical schedule that supports the extension must be submitted.
- 38.5.8** When submitting any claim over \$50,000, the Contractor shall certify in writing, under oath and in accordance with the formalities required by the contract, as to the following:

- 38.5.8.1** That supporting data is accurate and complete to the Contractor's best knowledge and belief;

- 38.5.8.2** That the amount of the dispute and the dispute itself accurately reflects what the Contractor in good faith believes to be the Department's liability;

- 38.5.8.3** The certification shall be executed by:

- 38.5.8.3.1** If the Contractor is an individual, the certification shall be executed by that individual.

- 38.5.8.3.2** If the Contractor is not an individual, the certification shall be executed by a senior company official in charge at the Contractor's plant or location involved or an officer or general partner of the Contractor having overall responsibility for the conduct of the Contractor's affairs.

**38.6 Auditing of Claims:** All claims filed against the Department shall be subject to audit by the Department or its agents at any time following the filing of such claim. The Contractor and its Subcontractors and suppliers shall cooperate fully with the Department's auditors. Failure of the Contractor, its Subcontractors, or its suppliers to maintain and retain sufficient records to allow the Department or its agents to fully evaluate the claim shall constitute a waiver of any portion of such claim that cannot be verified by specific, adequate, contemporaneous records, and shall bar recovery on any claim or any portion of a claim for which such verification is not produced. Without limiting the foregoing requirements, and as a minimum, the Contractor shall make available to the Department and its agents the following documents in connection with any claim that the Contractor submits:

- 38.6.1** Daily time sheets and foreman's daily reports.
- 38.6.2** Union agreements, if any.
- 38.6.3** Insurance, welfare, and benefits records.
- 38.6.4** Payroll register.
- 38.6.5** Earnings records.
- 38.6.6** Payroll tax returns.
  
- 38.6.7** Records of property tax payments.
- 38.6.8** Material invoices, purchase orders, and all material and supply acquisition contracts.
- 38.6.9** Materials cost distribution worksheets.
- 38.6.10** Equipment records (list of company equipment, rates, etc.).
- 38.6.11** Vendor rental agreements.
- 38.6.12** Subcontractor invoices to the Contractor, and the Contractor's certificates of payments to Subcontractors.
- 38.6.13** Subcontractor payment certificates.
- 38.6.14** Canceled checks (payroll and vendors).
- 38.6.15** Job cost reports.
- 38.6.16** Job payroll ledger.
- 38.6.17** General ledger, general journal (if used), and all subsidiary ledgers and journals, together with all supporting documentation pertinent to entries made in these ledgers and journals.
- 38.6.18** Cash disbursements journals.



**38.6.19** Financial statements for all years reflecting the operations on the Project.

**38.6.20** Income tax returns for all years reflecting the operations on the Project.

**38.6.21** Depreciation records on all company equipment, whether such records are maintained by the company involved, its accountant, or others.

**38.6.22** If a source other than depreciation records is used to develop costs for the Contractor's internal purposes in establishing the actual cost of owning and operating equipment, all such other source documents.

**38.6.23** All documents which reflect the Contractor's actual profit and overhead during the years that the Project was being performed, and for each of the five years prior to the commencement of the Project.

**38.6.24** All documents related to the preparation of the Contractor's bid, including the final calculations on which the total proposed Contract bid price as stated in the Bid Proposal Form was based.

**38.6.25** All documents which relate to the claim or to any sub-claim, together with all documents that support the amount of damages as to each claim or sub-claim.

**38.6.26** Worksheets used to prepare the claim, which indicate the cost components of each item of the claim, including but not limited to the pertinent costs of labor, benefits and insurance, materials, equipment, and Subcontractors' damages, as well as all documents which establish the relevant time periods, individuals involved, and the Project hours and the rates for the individuals.

**38.6.27** The name, function, and pertinent activity of each Contractor's or Subcontractor's official, or employee, involved in or knowledgeable about events that give rise to, or facts that relate to, the claim.

**38.6.28** The amount(s) of additional compensation sought and a break-down of the amount(s) into the categories specified as payable under Paragraph 38.4 above.

**38.6.29** The name, function, and pertinent activity of each Department official, employee, or agent involved in or knowledgeable about events that give rise to, or facts that relate to, the claim.

### **ARTICLE 39**

#### **DIESEL VEHICLE EMISSIONS CONTROL**

**39.1** The Contractor shall be responsible for compliance with the following provisions:

**39.1.1** All Contractor and Subcontractor diesel powered non-road construction equipment with engine horsepower (HP) ratings of 60 HP and above, that are on the Project or are assigned to the Contract for a period in excess of 30 consecutive Days, shall be retrofitted with emission control devices in order to reduce diesel emissions. In addition, all motor vehicles and/or construction equipment (both on-highway and non-road) shall comply with all pertinent State and Federal regulations relative to exhaust emission controls and safety.

**39.1.2** Retrofit emission control devices shall consist of oxidation catalysts, or similar retrofit equipment control technology that is:

**39.1.2.1** Included on the U.S. Environmental Protection Agency (EPA) "Verified Technology List," as may be amended from time to time  
<http://www.epa.gov/otaq/retrofit/retroverifiedlist.htm>  
and

**39.1.2.** Verified by EPA to provide a minimum emissions reduction of 20% particulate matter (PM<sub>10</sub>), 40% carbon monoxide (CO), and 50% hydrocarbons (HC).

**39.1.3** Construction shall not proceed until all diesel powered non-road construction equipment meeting the criteria in provision 39.1.1 have been retrofitted, unless the Commissioner grants a waiver under provision 39.2.

**39.1.4** The Contractor shall at least monthly, assess which diesel powered non-road construction equipment are subject to these provisions. The Contractor shall notify the CT DCS Project Manager of any violations of these provisions.

**39.1.5** Idling of delivery and/or dump trucks, or other diesel powered equipment shall be limited to three (3) minutes during non-active use in accordance with the Regulations of Connecticut State Agencies Section 22a-74-18(b)(3)(C), which states, in part:

*"[N]o person shall cause or allow a Mobile Source to operate for more than three (3) consecutive minutes when such Mobile Source is not in motion, except as follows:*

*When a Mobile Source is forced to remain motionless because of traffic conditions or mechanical difficulties over which the operator has no control,*

*When it is necessary to operate defrosting, heating or cooling equipment to ensure the safety or health of the driver or passengers,*

*When it is necessary to operate auxiliary equipment that is located in or on the Mobile Source to accomplish the intended use of the Mobile Source, (To bring the Mobile Source to the manufacturer's recommended)*

*When a Mobile Source is in queue to be inspected by U.S. military personnel prior to gaining access to a U.S. military installation."*

**39.1.6** All Work shall be conducted to ensure that no harmful effects are caused to adjacent Sensitive Receptor Sites. Diesel powered engines shall be located away from fresh air intakes, air conditioners, and windows.

**39.1.7** If any diesel powered non-road construction equipment is found to be in non-compliance with these provisions by the CT DCS Project Manager, the Contractor will be issued a Non-Conformance Notice and given a 24 hour period in which to bring the equipment into compliance or remove it from the Project. The Contractor's failure to comply with these provisions shall be reason to withhold payment as described in Article 33.

**39.1.8** Any costs associated with these provisions shall be included in the general cost of the contract. In addition, there shall be no time granted to the Contractor for compliance with these provisions. The Contractor's compliance with these provisions and any associated regulations shall not be grounds for a Change Order.

**39.2** The Commissioner reserves the right to waive all or portions of these provisions at his/her discretion. The Contractor may request a waiver to all or portions of these provisions with written justification to the Commissioner as to why the Contractor cannot comply with these provisions. A waiver, to be effective, must be granted in writing by the Commissioner.

**END**

**Appendix 1**



**7048**  
**General Contractor**  
**Retainage Reduction Request**  
**(SAMPLE)**

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**To:** Allen V. Herring, P.E., CT DCS Chief Engineer  
Room 265, 165 Capitol Avenue, Hartford, CT 06106

**From:** (Insert GC's Name ), General Contractor

**Subject:** Project No. ( ) Reduction of Retainage at ( )% project completion

In accordance with the General Conditions, Article 28 Progress Payments, (insert GC's name) hereby requests a reduction of retainage to an amount of insert written percent Percent (insert numerical percent%). The following list of items required under the General Conditions is in compliance with the terms of the contract and has been verified by the General Contractor.

- DAS Contractor Performance Evaluation Score is a minimum of **Sixty (60%) Percent**.
- Timely submission of an appropriate and complete CPM Schedule and Schedule of Values, in compliance with the Contract requirements and the prompt resolution of the Owner's and/or A/E's comments on the submitted material resulting in an appropriate basis for progress of the Work.
- Timely and proper submission of all Contract Document required submissions: including but not limited to Shop Drawings, material certificates and material samples and the prompt resolution of the Owner's and/or Architect's or Engineer's comments on the submitted material resulting in an appropriate progress of the Work.
- Proper and adequate supervision and home office support of the Project.
- The Work completed to date has been installed or finished in a manner acceptable to the Owner.
- The progress of the Work is consistent with the approved CPM Schedule.
- All approved credit Change Orders have been invoiced.
- All Change Order requests for pricing are current.
- The General Contractor has and is maintaining a clean worksite in accordance with the Contract Documents.
- All Subcontractor payments are current at the time of reduction request.
- General Contractor is compliant with set-aside provisions of the contract.

**General Contractor Certification:** \_\_\_\_\_  
(Written Name) (Signature) (Date)

**Project Manager Recommendation:** \_\_\_\_\_  
(Written Name) (Signature) (Date)

**Approved:**  
Allen V. Herring, P.E.  
CT DCS Chief Engineer  
\_\_\_\_\_  
(Signature) (Date)





**Supplementary Conditions of the Contract for Construction  
For Design - Bid - Build  
Department of Administrative Services • Construction Services  
State of Connecticut**

**1.0 Supplementary Conditions:**

- 1.1 These Supplementary Conditions modify the State of Connecticut, Department of Construction Services, Section 00 72 13 General Conditions of the Contract for Construction for Design – Bid- Build (Rev. 03.26.12 ), and other provisions of the Contract Documents as indicated below. All provisions which are not so modified remain in full force and effect.
- 1.2 The terms used in these Supplementary Conditions which are defined in the Section 00 72 13 General Conditions of the Contract for Construction for Design – Bid- Build (Rev. 03.26.12), have the meanings assigned to them in the General Conditions.

**2.0 Section 00 72 13 General Conditions Of The Contract For Construction For Design - Bid – Build:**

- 2.1 **ADD:** Subsection 3.6 to **ARTICLE 3, CORRELATION OF CONTRACT DOCUMENTS**, as follows:

3.6 In accordance with Public Act No. 13-247 (Effective June 19, 2013), wherever the term "Commissioner of Construction Services" is used in the "Bidding Documents" or "Project Manual" the term "Commissioner of Administrative Services" shall be substituted in lieu thereof; and wherever the term "Department of Construction Services" is used in "Bidding Documents" or "Project Manual", the term "Department of Administrative Services" shall be substituted in lieu thereof.

- 2.2 **DELETE:** Subsection 28.2 in its entirety from **ARTICLE 28, PARTIAL PAYMENTS**.

**ADD:** Subsection 28.2 to **ARTICLE 28, PARTIAL PAYMENTS**, as follows:

28.2 In making such Application For Payment for the Work, there shall not be more than **seven** and **one-half percent (7.5%)** deducted from the amount of each Application for Payment to be retained by the Owner as Retainage until Final Completion.

28.2.1 At **fifty percent (50%)** completion of the Work the Retainage shall be reduced to **five percent (5%)**. All subsequent Applications for Payment shall be subject to **five percent (5%) Retainage**. Upon Substantial Completion, and in the Commissioner's sole discretion and based upon the factors set forth in **Section 28.3**, the Retainage may be reduced upon the request of the Contractor and recommendation of the CT DAS Project Manager. In the event of a reduction in Retainage to below **five percent (5%)**, the minimum Retainage withheld shall not be less than the CT DAS Project Manager's estimate of the remaining Work or **two and one-half percent (2.5%)**, whichever is greater. All requests for Retainage Reduction shall be done on **CT DAS Form 7048 General Contractor Retainage Reduction Request**, which can be found at the end of the General Conditions.

28.2.2 Subsequent to Substantial Completion, in limited circumstances, at the sole discretion of the Commissioner and based upon factors set forth in **subsection 28.3**, a reduction of Retainage below **two and one-half percent (2.5%)** may be considered.

28.2.3 A "Good" Contractor's Performance Evaluation score shall be defined as a minimum total score of sixty percent (60%).

- 2.3 **ADD** Subsections **Definitions** to **ARTICLE 1 DEFINITIONS**, as follows:

- 2.3.1 **DELETE:** 1.71 in its entirety from **ARTICLE 1 DEFINITIONS**.

**ADD:** Subsection 1.71 to **ARTICLE 1 PARTIAL DEFINITIONS**, as follows:

1.71 **WORK:** The construction and services required by the Contract Documents, and including all labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project and "Work Phase".

**ADD:** Subsection 1.72 to **ARTICLE 1 DEFINITIONS**, as follows:

1.72 **WORK PHASE:** Construction of the Project by sequence or time intervals, which may include but not be limited to separate Construction Start Dates, Substantial Completion Dates, Application for Payments, Change Orders, Liquidated Damages, Retainage, and Subcontractors for each Work Phase.



2.4 **DELETE:** Appendix 1 from Section 00 72 13.1 in its entirety.  
**ADD:** New Appendix 1 to Section 00 72 13.1 as follows:

	<b>7048</b> <b>General Contractor (GC)</b> <b>Retainage Reduction Request</b> <i>(Sample)</i>
Page 2 of 1	

<b>To:</b>	Department of Administrative Services (DAS) Construction Services Office of Legal Affairs, Policy and Procurement 450 Columbus Blvd, Suite 1302 – North Tower Hartford, CT 06103		
<b>From:</b>	<input type="text" value="GC's Name"/>	General Contractor (GC)	
<b>Subject:</b>	DAS Project Number: <input type="text" value="DAS Project Number"/>		
	Reduction of Retainage at: <input type="text" value="Written Percent"/>	Percent ( <input type="text" value="##.#"/> %)	
<b>Date:</b>	<input type="text" value="Click or tap to enter a date."/>		

In accordance with the General Conditions, Article 28 Progress Payments,  
 ,  
 hereby requests a reduction of retainage to an amount of  Percent (  %)  
 The following list of items required under the General Conditions is in compliance with the terms of the contract and has been verified by the General Contractor (GC).

- DAS Construction Services Contractor Performance Evaluation Score is a minimum of **Sixty (60%) Percent**.
- Timely submission of an appropriate and complete CPM Schedule and Schedule of Values, in compliance with the Contract requirements and the prompt resolution of the Owner's and/or A/E's comments on the submitted material resulting in an appropriate basis for progress of the Work
- Timely and proper submission of all required Contract Document submissions including but not limited to Shop Drawings, material certificates, material samples and the prompt resolution of the Owner's and/or A/E's comments on the submitted material resulting in an appropriate progress of the Work.
- Proper and adequate supervision and home office support of the Project.
- The Work completed to date has been installed or finished in a manner acceptable to the Owner.
- The progress of the Work is consistent with the approved CPM Schedule.
- All approved credit Change Orders have been invoiced.
- All Change Order requests for pricing are current.
- The GC has and is maintaining a clean worksite in accordance with the Contract Documents.
- All Subcontractor payments are current at the time of reduction request.
- GC is compliant with set-aside provisions of the contract.

<b>General Contractor Certification:</b>	<input type="text"/> <i>(Written Name)</i>	<input type="text"/> <i>(Signature)</i>	<input type="text"/> <i>(Date)</i>
<b>Project Manager Recommendation:</b>	<input type="text"/> <i>(Written Name)</i>	<input type="text"/> <i>(Signature)</i>	<input type="text"/> <i>(Date)</i>
<b>DAS Chief Engineer or Authorized Representative:</b>	<input type="text"/> <i>(Written Name)</i>	<input type="text"/> <i>(Signature)</i>	<input type="text"/> <i>(Date)</i>

**END**

CT DAS – 7048 (Rev. 05.22.17) 7000 – Construction Phase Forms

**END OF SECTION**

## Set-Aside Contractor Schedule [SAMPLE ONLY]

**VIA EMAIL**

**Contractor Name**  
**Contractor Address**  
**City, State, Zip Code**

**BID OPENING DATE**

**Re:** DAS Project Description  
 DAS Project Number

**Date:**

**Dear Contractor:**

**Section 00 45 17 Named Subcontractor Bidders Qualification Statement(s)** is / (are) required for this project, only for your Named Subcontractors listed in Table 2.7 of your Section 00 41 00 Bid Proposal Form.

No person whose subcontract exceeds five hundred thousand dollars in value may perform work as a subcontractor on a project, which project is estimated to cost more than five hundred thousand dollars and is paid for, in whole or in part, with state funds, *unless, at the time of bid submission*, the person is prequalified in accordance with the Connecticut General Statutes Section 4a-100, as amended. This includes the contractor's or substantial subcontractor's prequalification classifications, aggregate work capacity ratings and single project limits.

In accordance with **Subsection 2.9 "Set-Aside Requirements" of Section 00 21 13 Instructions to Bidders**, you are required to *list* below the names of each *currently certified set-aside contractor* to be used for this project, along with the dollar *amount* to be paid each set-aside contractor.

The **responsibility** for listing a qualified and certified set-aside contractor rests solely with the **bidder** and not the State. **Listing a set-aside contractor who does not qualify may be considered the same as not listing one at all and the bid may be considered non-responsive and subject to rejection.**

Name	Address	* Amount	Indicate Whether: Subcontractor, Or Supplier, Or Both	** Class of Work
SAMPLE	SAMPLE	SAMPLE	SAMPLE	SAMPLE

**\*Amount:** The total dollar amount to be paid to the set aside contractors must not be less than the percentage(s) stated in the Bid Proposal Form.

**\*\*Class of Work:** Means the name of the trade work to be provided by the Subcontractor or Supplier.

**ATTACHMENTS:**

**For Each of the Named Subcontractors:**

- Attach their Section 00 45 17 Named Subcontractor Bidders Qualification Statement(s)

**For Each of the Named Set-Aside SBE/MBE Contractors:**

- Attach their DAS Set-Aside Certificate of Eligibility (SBE and/or MBE)

**For Each of the Named Subcontractors With Subcontracts Greater Than \$500,000:**

- Attach their DAS Prequalification Certificate and Update (Bid) Statement for the Class of Work

\_\_\_\_\_  
 Contractor Authorized Signature & Title \_\_\_\_\_ Date

This Form Must Be Received No Later Than \_\_\_\_\_ At:

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

**Attn:**





**State Of Connecticut  
Department of Administrative Services  
Construction Services**

February 1, 2019

**To:** All Department of Administrative Services, Construction Services Contractors  
**Subject:** Set-Aside Contract Laws

Dear Sir/Madam:

The administration of Governor Ned Lamont is committed to supporting the subject programs by encouraging all contractors on State projects to improve their efforts in these areas.

State law requires contractors doing business with the State to demonstrate non-discrimination by making "good faith efforts" in both hiring and in sub-contracting practices (Connecticut General Statutes Section [C.G.S. §] 4a-60).

What does "good faith efforts" mean? It means that you, as contractors, must act affirmatively. It is not good enough to say you can't find minorities and women. You must seek them out. That is the law, and the Department of Administrative Services (DAS) / Construction Services (CS) is committed to enforcing the law. At the same time, we are ready to assist you in making "good faith efforts."

DAS is required by C.G.S. § 4a-60g (b) and (c) to set aside projects (amounting to **twenty-five percent (25%)** of its annual contract awards) for small business and **twenty-five percent (25%)** of that amount for minority business enterprises. DAS may require any general contractor to set aside a portion of the contract for subcontractors who are small businesses or minority business enterprises in lieu of setting aside a project or in addition to setting aside a project.

Therefore, unless otherwise specified in the **Bid Proposal Form**, DAS will require contractors to subcontract **twenty-five percent (25%)** of the total contract value to small businesses certified by DAS and further will require contractors to subcontract 25% of that 25% to minority and women small contractors certified as minority business enterprises by DAS. These statutory goals represent the minimum values expected to be achieved by this program.

Together, we can meet the challenge of providing equal opportunity for minority and women-owned businesses and workers in our State. We expect superior results in the areas of affirmative action, equal employment opportunity, and set-aside contracts. The DAS standard in these areas is not just minimal effort. Our goal is to uphold the letter and the spirit of the law.

For more information on Non-Discrimination and Affirmative Action Provisions for State Contracts please visit the Commission on Human Rights and Opportunities (**CHRO**) Website at [www.ct.gov/chro](http://www.ct.gov/chro).

Sincerely yours,

Josh Geballe  
Commissioner

PB:pb

## Non-Discrimination and Affirmative Action Provisions for State Contracts

Section 1	CHRO – Contract Compliance Regulations Notification to Bidders:
1.1	<p>The contract to be awarded is subject to contract compliance requirements mandated by:</p> <ul style="list-style-type: none"><li>1.1.1 The <b>Connecticut General Statutes (C.G.S.) § 4a-60</b> and <b>4a-60a</b>;</li><li>1.1.2 <b>C.G.S. § 46a-71(d)</b> and <b>46a-81i (d)</b> when the awarding agency is the State; and</li><li>1.1.3 The <b>Contract Compliance Regulations</b> codified in the <b>Regulations of Connecticut State Agencies (RSCA) §46a-68j-21 through 43</b>, which establish a procedure for awarding all contracts covered by <b>C.G.S. §4a-60</b> and <b>46a-71(d)</b>.</li></ul>
1.2	<p>According to the <b>Contract Compliance Regulations §46a-68j-30(9)</b>, every agency awarding a contract subject to the contract compliance requirements has an obligation to “aggressively solicit the participation of legitimate minority business enterprises as bidders, contractors, subcontractors and suppliers of materials.”</p> <p>“<b>Minority business enterprise</b>” is defined in <b>C.G.S §4a-60</b>-as a small contractor or supplier of materials fifty-one (51%) percent or more of the capital stock or assets of which is owned by a person or persons:</p> <ul style="list-style-type: none"><li>1.2.1 who are active in the daily affairs of the enterprise;</li><li>1.2.2 who have the power to direct the management and policies of the enterprise; and</li><li>1.2.3 who are members of a minority, as such term is defined in subsection (a) of <b>C.G.S. §32-9n.</b>”</li></ul>
1.3	<p>“<b>Minority</b>” groups are defined in <b>C.G.S. §32-9n</b> as:</p> <ul style="list-style-type: none"><li>1.3.1 Black Americans, including all persons having origins in any of the Black African racial groups not of Hispanic origin;</li><li>1.3.2 Hispanic Americans, including all persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race;</li><li>1.3.3 Persons who have origins in the Iberian Peninsula, including Portugal, regardless of race;</li><li>1.3.4 Women;</li><li>1.3.5 Asian Pacific Americans and Pacific Islanders; or</li><li>1.3.6 American Indians and persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification.</li><li>1.3.7 “<b>Individuals with a disability</b>” is also a minority business enterprise as provided by C.G.S. § 4a-60g (4).</li></ul>
1.4	<p>The above “<b>Minority business enterprise</b>” definitions apply to the contract compliance requirements by virtue of <b>Contract Compliance</b> Regulations §46a-68j-21(11).</p> <p>The awarding agency will consider the following factors when reviewing the bidder’s qualifications under the contract compliance requirements:</p> <ul style="list-style-type: none"><li>1.4.1 the bidder’s success in implementing an affirmative action plan;</li><li>1.4.2 the bidder’s success in developing an apprenticeship program complying with <b>RSCA §46a-68-1 to 46a-68-17</b>, inclusive;</li><li>1.4.3 the bidder’s promise to develop and implement a successful affirmative action plan;</li><li>1.4.4 the bidder’s submission of employment statistics contained in the “Employment Information Form”, indicating that the composition of its workforce is at or near parity when compared to the racial and sexual composition of the workforce in the relevant labor market area; and</li><li>1.4.5 the bidder’s promise to set aside a portion of the contract for legitimate minority business enterprises. See <b>Contract Compliance Regulations § 46a-68j-30(10) (E)</b>.</li></ul>

**Note:** The Commission on Human Rights and Opportunities (CHRO) “Employment Information Form” shall be submitted to the DAS/CS Office of Legal Affairs, Policy, and Procurement on behalf of the awarding agency, the Department of Administrative Services (DAS).

<b>Section 2</b>	<b>Non-Discrimination and other Contract Compliance Requirements:</b>
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Pursuant to **C.G.S. §4a-60** and **§4a-60a** and **RSCA §46a-68j-21 to §46a-68j-43**, a contractor agrees to the following:

- 2.1** Not to discriminate or permit discrimination against any person or group of persons on the grounds of race, color, religious creed, age, marital status, national origin, ancestry, sex, sexual orientation, mental retardation, or physical disability including, but not limited to, blindness (unless it is shown that such disability prevents performance of the work involved) in the performance of a contract, in any manner prohibited by the federal and Connecticut anti-discrimination and contract compliance laws;
- 2.2** To undertake affirmative action which will insure that applicants with job-related qualifications are employed and that employees are treated, when employed, without regard to whether they belong to any of the groups identified in Paragraph # 1) above;
- 2.3** To include a statement that the contractor is an “affirmative action-equal opportunity employer”, in all solicitations or advertisements for employees placed by or on behalf of the contractor;
- 2.4** To provide each labor union or representative of workers with which such contractor has a collective bargaining agreement and each vendor with which such contractor has a contract, a notice advising them of the contractor’s commitments under **C.G.S. §4a-60** and **§4a-60a**. The notice is available by contacting **CHRO**;
- 2.5** To post copies of the notice referred to in item 4) in conspicuous places available to employees and applicants;
- 2.6** To provide **CHRO** with such information requested by said agency, permit access to pertinent books, records, and accounts, concerning the employment practices and procedures of the contractor as relate to the provisions of **C.G.S. §4a-60**, **§4a-60a** and **§46a-56** and, cooperate fully with **CHRO**; and,
- 2.7** To include the language of **C.G.S. §4a-60 (a)** and **§4a-60a (a)** in every subcontract or purchase order executed to fulfill any obligation of the contract with DAS.

<b>Section 3</b>	<b>Affirmative Action Requirements for Certain Public Works Contracts for Construction:</b>
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Pursuant to **C.G.S. §46a-68c** and **§46a-68d** and **RSCA §46a-68j-21 to §46a-68j-29**, the following must file an affirmative action plan with the Commission:

- 3.1** A successful bidder on a <sup>1</sup> “**public works contract**” with a value of **\$500,000** or more. The plan must be filed within **thirty (30)** days after a bid has been accepted by an awarding agency but before a contract is awarded. A plan may be filed in advance of, or at the same time as, a bid is submitted.
- 3.2** A contractor with **fifty (50)** or more employees who has been awarded a “**public works contract**” in excess of **\$50,000** in any fiscal year. A plan must be filed within **thirty (30) days** of the date a contract is awarded.

**CHRO** must review a plan within **sixty (60) days** of receipt and must either approve or reject a plan. Should **CHRO** approve an affirmative action plan, **CHRO** will issue a certificate of compliance. This certificate of compliance shall be proof of a successful bidder’s or a contractor’s eligibility to bid or be awarded contracts for a period of **two (2)** years from the date of the certificate. This certificate does not excuse a successful bidder or contractor from being monitored by the **CHRO** for implementation of its affirmative action plan or, from its reporting requirements under **C.G.S. 46a-68e** and **§ 46a-68f**. (Refer to Section 6) Also, **CHRO** may revoke the certificate if a successful bidder or contractor does not implement its affirmative action plan.

Should **CHRO** opt to disapprove an affirmative action plan, **CHRO** must notify the successful bidder or contractor in writing within **ten (10) days** of the disapproval. The notice will state the reason for disapproval and may provide necessary proposals to bring the plan into compliance. The successful bidder or contractor must then submit a new or amended plan, within **thirty (30) days** of the date the notice of disapproval is mailed by **CHRO**.

**Section 3**

(Continued):

In addition, **CHRO** may conditionally approve an affirmative action plan for a successful bidder on a public works contract valued at **\$500,000** or more. **CHRO** must notify the successful bidder in writing within **ten (10) days** of the conditional disapproval and state the reason for conditional approval and, may provide necessary proposals to bring the plan into compliance. The successful bidder must then submit a new or amended plan or, provide written assurances that it will amend its plan to conform to affirmative action requirements, within **thirty (30) days** of the date the notice is mailed by **CHRO**.

**Note:** The awarding agency (DAS) will provide a successful bidder or contractor with a copy of **CHRO**'s Affirmative Action Plan format. All sections of this Affirmative Action Plan format must be completed by the successful bidder or contractor and forwarded to **CHRO**. Also, the awarding agency (DAS) shall withhold **2%** of the total contract price per month from any payment made to a contractor until such time as the contractor has developed an affirmative action plan, which has been approved by **CHRO**.

<sup>1</sup> **“public works contract”** means any agreement between any individual, firm or corporation and the state or any political subdivision of the state other than a municipality for construction, rehabilitation, conversion, extension, demolition or repair of a public building, highway or other changes or improvements in real property, or which is financed in whole or in part by the state, including, but not limited to, matching expenditures, grants, loans, insurance or guarantees.-**C.G.S. §46a-68b**.

**Section 4**

**“Good Faith Efforts” to Include Minority Business Enterprises as Subcontractors”:**

In addition to, or in the absence of, any other subcontractor requirements included in this project, contractors are required to make <sup>2</sup> **“good faith efforts”** to include minority business enterprises in the work of this project as subcontractors (for services and/or material suppliers). For the purpose of identifying minority business enterprises, a minority business enterprise shall be a subcontractor which has a valid certification as such from DAS and/or a subcontractor for which an affidavit has been submitted by the contractor attesting that the subcontractor named as a minority business enterprise meets the minority business enterprise criteria set out in **C.G.S. §4a-60(b)**.

<sup>2</sup> **“Good faith efforts”** means *“that degree of diligence which a reasonable person would exercise in the performance of legal duties and obligations”* and includes, but is not limited to, the following **factors**: the contractor's employment and subcontracting policies and practices; affirmative advertising, recruitment, training, technical assistance activities and such other reasonable activities or efforts as **CHRO** may recommend to ensure the participation of minority business enterprises in state projects.

Section 5

Set-Aside Program:

This contract may be subject to the provisions the **Set-Aside Program for Small Contractors** found at **C.G.S. § 4a-60g** and may be awarded only to a contractor certified as a small and/or minority business enterprise by DAS. The notification as to this special provision will be found in the **Bid Proposal Form** for this contract. The listing of eligible "Set-Aside" contractors is found on the [DAS Website for SBE or MBE Certification](#). In the event that the **Set-Aside Program for Small Contractors** applies to this contract, the following special provisions will also apply:

**5.1 Amount of Work Required to Be Done by "Set-Aside" Contractors**

A contractor awarded a contract on a project pursuant to the provisions of **C.G.S. §4a-60g**, as amended, shall be required to perform not less than **thirty (30)** per cent of the work with his/her own forces and shall ensure that not less than **fifty (50)** per cent of the work be performed by contractors or subcontractors who are certified as small contractors or minority business enterprises pursuant to **C.G.S. §4a-60g**.

The primary product/service performed by contractors working on a contract awarded under **C.G.S. §4a-60g** must be the same as the primary product/service described for the contractors on their "Certificate of Eligibility" which is provided to them by DAS.

**5.2 Alternate Bonding Available to "Set Aside" Contractors**

In lieu of a performance, bid, labor and materials or other required bond, a contractor or subcontractor awarded a contract under **C.G.S. §4a-60g** may provide to the awarding authority (DAS) and the awarding authority shall accept a "Letter of Credit". Any such "Letter of Credit" shall be in an amount equal to **ten per cent (10%)** of the contract for any contract that is less than **one hundred thousand (\$100,000) dollars**, and in the amount of **twenty-five per cent (25%)** for any contract that is **one hundred thousand (\$100,000) dollars** or more.

**5.3 Procedures to Follow Regarding Substitution of Named Project "Set-Aside" Subcontractors.**

The awarding authority (DAS) may also require the contractor to set aside a portion of the contract for subcontractors who are eligible for set aside contracts. The awarding authority shall not permit substitution of a subcontractor for one named in accordance with the provisions of **C.G.S. § 4b-95** or substitution of a subcontractor for any designated sub-trade work bid to be performed by the contractor's own forces, except for good cause.

Pursuant to **C.G.S. § 4b-95**, the term "**good cause**" includes but is not limited to a subcontractor's or, where appropriate, a general contractor's:

**5.3.1** Death or physical disability, if the listed subcontractor is an individual;

**5.3.2** Dissolution, if a corporation or partnership;

**5.3.3** Bankruptcy;

**5.3.4** Inability to furnish any performance and payment bond shown on the bid form;

**5.3.5** Inability to obtain, or loss of, a license necessary for the performance of the particular category of work;

**5.3.6** Failure or inability to comply with a requirement of law applicable to contractors and subcontractors, or to subcontracts for construction, alteration, or repair projects;

**5.3.7** Failure to perform his/her agreement to execute a subcontract under **C.G.S. § 4b-96**.

Any general contractor who violates any provision of **C.G.S. § 4b-95** shall be disqualified from bidding on other contracts that are subject to the provisions of **Chapter 60 - Construction and Alterations of State Buildings of the C.G.S**, for a period **not to exceed twenty-four (24) months**, commencing from the date on which the violation is discovered, for each violation.

<b>Section 6</b>	<b>Contract Monitoring and Reporting:</b>
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- 6.1 CHRO** has the authority to monitor state contractors pursuant to **C.G.S. § 46a-68e** and **46a-68f** and **RSCA-§46a-68j-23(3)**. In addition, under the **RSCA §46a-68j-25(e)** and **46a-68j-26 (g)**, **CHRO** has the authority to monitor the implementation of an affirmative action plan regarding:
- 6.1.1** a successful bidder who has been awarded a public works contract valued at **\$500,000 or more** and;
  - 6.1.2** a contractor with **fifty (50)** or more employees who has been awarded a public works contract **in excess of \$50,000 in any fiscal year**.
- 6.2** In order to monitor the implementation of these plans **CHRO** requires that the following contract monitoring reports be compiled and submitted:
- 6.2.1 Monthly Employment Utilization Report (Form CHRO: 257):** A contractor, on behalf of itself and all subcontractors who perform work on the project during a given month, is required to report on the work hour participation of minority male and female workers in each trade category on the project. The report must be submitted to the contract awarding agency (**DAS**) and to the Commission by the 15<sup>th</sup> day following the end of each calendar month during the term of the on-site construction work of the project.  
**Website page:** <http://www.ct.gov/chro>, then click on **Forms**, then click on **Contract Compliance Forms and Reports**.
  - 6.2.2 Quarterly Small Contractor and Minority Business Enterprise Payment Status Report (Form CHRO: 258).** A contractor is required to report on the participation of small contractors or minority business enterprises identified to participate on the project. The report must be submitted to the contract awarding agency (**DAS**) and to the Commission by the 15<sup>th</sup> day following the end of each calendar quarter during the term of the on-site construction work of the project.  
**Website page:** <http://www.ct.gov/chro>, then click on **Forms**, then click on **Contract Compliance Forms and Reports**.
  - 6.2.3** In addition, the Commission expects that a contractor will designate an Equal Opportunity/Contract Compliance Officer for its public works project who will compile the above monthly and quarterly reports, as well as, undertake the following responsibilities for implementation of its project Affirmative Action Plan (AAP):
    - .1** Maintain a project Equal Employment Opportunity (EEO) file to include all records, correspondence and other documentation relate to the project AAP.
    - .2** Communicate to and inform all project subcontractors, regardless of tier, and labor referral organizations (if applicable) about project equal employment and AAP commitments and performance requirements.
    - .3** Participate in project job meetings to inform project subcontractors about project equal employment and AAP performance requirements.
    - .4** Track the use of employment recruitment sources identified in the project AAP regarding all employment opportunities with all subcontractors on the project. Also, maintain documentation of all contacts with these recruitment sources and their responses.

The Commission will forward a copy of the monthly and quarterly report to each contractor on a public works project.

<b>NOTES:</b>	Bidders and state contractors may review the full text of the before referenced Connecticut General Statutes by accessing either the State Law Library's web site ( <a href="http://www.cslib.org/psaindex.htm">http://www.cslib.org/psaindex.htm</a> ) or the State Legislatures' web site ( <a href="http://www.cga.ct.gov">http://www.cga.ct.gov</a> ).
	The full text of the RSCA 46a-68j-21 through 46a-68j-43 may be reviewed by accessing the Commission's web site: <a href="http://www.ct.gov/chro/cwp/view.asp?a=2525&amp;Q=315900&amp;chroPNavCtr=#45679">http://www.ct.gov/chro/cwp/view.asp?a=2525&amp;Q=315900&amp;chroPNavCtr=#45679</a> In the alternative, bidders or state contractors may request a copy of these state statutes and regulations by contacting the Commission at (860) 541-3400 (in Hartford) or 1 (800) 477-5737.

<b>Section 7</b>	<b>CHRO Contract Compliance Forms:</b>
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The following CHRO Contract Compliance Forms are available on the CHRO Website:

**7.1 Monthly Employment Utilization Report (Form CHRO-257 and CHRO-257a):**

- <http://www.ct.gov/chro/lib/chro/257s.pdf>

**7.2 Cumulative Utilization Report (Form CHRO-257b):**

- <http://www.ct.gov/chro/lib/chro/257b.pdf>

**7.3 Monthly Small Contractor & MBE Payment Status Report (Form CHRO-258a) and Quarterly Small Contractor & MBE Payment Status Report (Form CHRO-258):**

- <http://www.ct.gov/chro/lib/chro/258s.pdf>

**End of Section  
00 73 38 CHRO / Contract Compliance Regulations**





**Minimum Rates and Classifications  
for Building Construction**

**Connecticut Department of Labor  
Wage and Workplace Standards Division**

By virtue of the authority vested in the Labor Commissioner under provisions of Section 31-53 of the General Statutes of Connecticut, as amended, the following pages are declared to be the prevailing rates and welfare payments and will apply only where the contract is advertised for bid within 20 days of the date on which the rates are established. Any contractor or sub-contractor not obligated by agreement to pay to the welfare and pension fund shall pay this amount to each employee as part of his hourly wage.

<b>Project Number:</b>	BI-2B-433	<b>Project Town:</b>	Hartford, CT
<b>Project: Roof Replacement and Weatherproofing</b>			
460/470 Capitol Avenue			
Hartford, CT			

The following pages contain:

Contractors Wage Certification Form	1 page
Notice to all Mason Contractors reference Section 31-53 of C.G.S. (Prevailing Wages)	1 page
Prevailing Wage Rates - English	15 pages
Informational Bulletin - <b>Occupational Classifications</b>	6 pages
Informational Bulletin – <b>The 10-Hour OSHA Construction Safety and Health Course</b>	2 pages
Footnotes	2 pages
Special Notice re: Wage Rate Adjustments	1 pages
Weekly Payroll Certification Form (WWS-CP1)	1 page
Fringe Benefits Explanation (P)	1 page
Weekly Payroll Certification Form (WWS-CP2)	1 page

**As of: February 7, 2019**





Opportunity \* Guidance \* Support



# **THIS IS A PUBLIC WORKS PROJECT**

**Covered by the**

# **PREVAILING WAGE LAW**

**CT General Statutes Section 31-53**

**If you have QUESTIONS regarding your wages  
CALL (860) 263-6790**

Section 31-55 of the CT State Statutes requires every contractor or subcontractor performing work for the state to post in a prominent place the prevailing wages as determined by the Labor Commissioner.



CONNECTICUT DEPARTMENT OF LABOR  
WAGE AND WORKPLACE STANDARDS DIVISION

**CONTRACTORS WAGE CERTIFICATION FORM**  
**Construction Manager at Risk/General Contractor/Prime Contractor**

I, \_\_\_\_\_ of \_\_\_\_\_  
Officer, Owner, Authorized Rep. Company Name

do hereby certify that the \_\_\_\_\_  
Company Name  
\_\_\_\_\_  
Street  
\_\_\_\_\_  
City

and all of its subcontractors will pay all workers on the  
\_\_\_\_\_  
Project Name and Number  
\_\_\_\_\_  
Street and City

the wages as listed in the schedule of prevailing rates required for such project (a copy of which is attached hereto).

\_\_\_\_\_  
Signed

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

\_\_\_\_\_  
Notary Public

Return to:

Connecticut Department of Labor  
Wage & Workplace Standards Division  
200 Folly Brook Blvd.  
Wethersfield, CT 06109

*Rate Schedule Issued (Date):* \_\_\_\_\_



November 29, 2006

**Notice**  
**To All Mason Contractors and Interested Parties**  
**Regarding Construction Pursuant to Section 31-53 of the**  
**Connecticut General Statutes (Prevailing Wage)**

The Connecticut Labor Department Wage and Workplace Standards Division is empowered to enforce the prevailing wage rates on projects covered by the above referenced statute.

Over the past few years the Division has withheld enforcement of the rate in effect for workers who operate a forklift on a prevailing wage rate project due to a potential jurisdictional dispute.

The rate listed in the schedules and in our Occupational Bulletin (see enclosed) has been as follows:

**Forklift Operator:**

- **Laborers (Group 4) Mason Tenders** - operates forklift solely to assist a mason to a maximum height of nine feet only.
- **Power Equipment Operator (Group 9)** - operates forklift to assist any trade and to assist a mason to a height over nine feet.

The U.S. Labor Department conducted a survey of rates in Connecticut but it has not been published and the rate in effect remains as outlined in the above Occupational Bulletin.

***Since this is a classification matter and not one of jurisdiction, effective January 1, 2007 the Connecticut Labor Department will enforce the rate on each schedule in accordance with our statutory authority.***

Your cooperation in filing appropriate and accurate certified payrolls is appreciated.

**Sec. 31-53b. Construction safety and health course. New miner training program. Proof of completion required for mechanics, laborers and workers on public works projects. Enforcement. Regulations. Exceptions.** (a) Each contract for a public works project entered into on or after July 1, 2009, by the state or any of its agents, or by any political subdivision of the state or any of its agents, described in subsection (g) of section 31-53, shall contain a provision requiring that each contractor furnish proof with the weekly certified payroll form for the first week each employee begins work on such project that any person performing the work of a mechanic, laborer or worker pursuant to the classifications of labor under section 31-53 on such public works project, pursuant to such contract, has completed a course of at least ten hours in duration in construction safety and health approved by the federal Occupational Safety and Health Administration or, has completed a new miner training program approved by the Federal Mine Safety and Health Administration in accordance with 30 CFR 48 or, in the case of telecommunications employees, has completed at least ten hours of training in accordance with 29 CFR 1910.268.

(b) Any person required to complete a course or program under subsection (a) of this section who has not completed the course or program shall be subject to removal from the worksite if the person does not provide documentation of having completed such course or program by the fifteenth day after the date the person is found to be in noncompliance. The Labor Commissioner or said commissioner's designee shall enforce this section.

(c) Not later than January 1, 2009, the Labor Commissioner shall adopt regulations, in accordance with the provisions of chapter 54, to implement the provisions of subsections (a) and (b) of this section. Such regulations shall require that the ten-hour construction safety and health courses required under subsection (a) of this section be conducted in accordance with federal Occupational Safety and Health Administration Training Institute standards, or in accordance with Federal Mine Safety and Health Administration Standards or in accordance with 29 CFR 1910.268, as appropriate. The Labor Commissioner shall accept as sufficient proof of compliance with the provisions of subsection (a) or (b) of this section a student course completion card issued by the federal Occupational Safety and Health Administration Training Institute, or such other proof of compliance said commissioner deems appropriate, dated no earlier than five years before the commencement date of such public works project.

(d) This section shall not apply to employees of public service companies, as defined in section 16-1, or drivers of commercial motor vehicles driving the vehicle on the public works project and delivering or picking up cargo from public works projects provided they perform no labor relating to the project other than the loading and unloading of their cargo.

(P.A. 06-175, S. 1; P.A. 08-83, S. 1.)



History: P.A. 08-83 amended Subsec. (a) by making provisions applicable to public works project contracts entered into on or after July 1, 2009, replacing provision re total cost of work with reference to Sec. 31-53(g), requiring proof in certified payroll form that new mechanic, laborer or worker has completed a 10-hour or more construction safety course and adding provision re new miner training program, amended Subsec. (b) by substituting "person" for "employee" and adding "or program", amended Subsec. (c) by adding "or in accordance with Federal Mine Safety and Health Administration Standards" and setting new deadline of January 1, 2009, deleted former Subsec. (d) re "public building", added new Subsec. (d) re exemptions for public service company employees and delivery drivers who perform no labor other than delivery and made conforming and technical changes, effective January 1, 2009.



Project: Roof Replacement And Weatherproofing At 460-470 Capitol Avenue

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**Minimum Rates and Classifications  
for Building Construction**

ID# : B 25651

**Connecticut Department of Labor  
Wage and Workplace Standards Division**

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By virtue of the authority vested in the Labor Commissioner under provisions of Section 31-53 of the General Statutes of Connecticut, as amended, the following are declared to be the prevailing rates and welfare payments and will apply only where the contract is advertised for bid within 20 days of the date on which the rates are established. Any contractor or subcontractor not obligated by agreement to pay to the welfare and pension fund shall pay this amount to each employee as part of his/her hourly wages.

Project Number:

Project Town: Hartford

State#: BI-2B-433

FAP#:

Project: Roof Replacement And Weatherproofing At 460-470 Capitol Avenue

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<b>CLASSIFICATION</b>	<b>Hourly Rate</b>	<b>Benefits</b>
1a) Asbestos Worker/Insulator (Includes application of insulating materials, protective coverings, coatings, & finishes to all types of mechanical systems; application of firestopping material for wall openings & penetrations in walls, floors, ceilings	38.25	27.96
<hr/>		
1b) Asbestos/Toxic Waste Removal Laborers: Asbestos removal and encapsulation (except its removal from mechanical systems which are not to be scrapped), toxic waste removers, blasters.**See Laborers Group 7**		
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1c) Asbestos Worker/Heat and Frost Insulator	40.21	29.30

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As of: **Thursday, February 07, 2019**

Project: Roof Replacement And Weatherproofing At 460-470 Capitol Avenue

2) Boilermaker	38.34	26.01
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3a) Bricklayer, Cement Mason, Concrete Finisher (including caulking), Stone Masons	33.48	32.06 + a
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3b) Tile Setter	34.90	25.87
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3c) Terrazzo Mechanics and Marble Setters	31.69	22.35
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3d) Tile, Marble & Terrazzo Finishers	26.70	21.75
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3e) Plasterer	33.48	32.06
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**As of: Thursday, February 07, 2019**

Project: Roof Replacement And Weatherproofing At 460-470 Capitol Avenue

-----LABORERS-----

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4) Group 1: Laborers (common or general), acetylene burners, carpenter tenders, concrete specialists, wrecking laborers, fire watchers.	30.05	20.10
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4a) Group 2: Mortar mixers, plaster tender, power buggy operators, powdermen, fireproofers/mixer/nozzleman (Person running mixer and spraying fireproof only).	30.30	20.10
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4b) Group 3: Jackhammer operators/pavement breaker, mason tender (brick), mason tender (cement/concrete), forklift operators and forklift operators (masonry).	30.55	20.10
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4c) **Group 4: Pipelayers (Installation of water, storm drainage or sewage lines outside of the building line with P6, P7 license) (the pipelayer rate shall apply only to one or two employees of the total crew who primary task is to actually perform the mating of pipe sections) P6 and P7 rate is \$26.80.	30.55	20.10
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4d) Group 5: Air track operator, sand blaster and hydraulic drills.	30.55	20.10
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Project: Roof Replacement And Weatherproofing At 460-470 Capitol Avenue

4e) Group 6: Blasters, nuclear and toxic waste removal. 31.80 20.10

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4f) Group 7: Asbestos/lead removal and encapsulation (except it's removal from mechanical systems which are not to be scrapped). 31.05 20.10

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4g) Group 8: Bottom men on open air caisson, cylindrical work and boring crew. 28.38 20.10

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4h) Group 9: Top men on open air caisson, cylindrical work and boring crew. 27.86 20.10

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4i) Group 10: Traffic Control Signalman 16.00 20.10

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5) Carpenter, Acoustical Ceiling Installation, Soft Floor/Carpet Laying, Metal Stud Installation, Form Work and Scaffold Building, Drywall Hanging, Modular-Furniture Systems Installers, Lathers, Piledrivers, Resilient Floor Layers. 32.60 25.34

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**As of: Thursday, February 07, 2019**

Project: Roof Replacement And Weatherproofing At 460-470 Capitol Avenue

5a) Millwrights	33.14	25.74
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6) Electrical Worker (including low voltage wiring) (Trade License required: E1,2 L-5,6 C-5,6 T-1,2 L-1,2 V-1,2,7,8,9)	40.00	25.97+3% of gross wage
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7a) Elevator Mechanic (Trade License required: R-1,2,5,6)	51.71	32.645+a+b
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-----LINE CONSTRUCTION-----

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Groundman	26.50	6.5% + 9.00
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Linemen/Cable Splicer	48.19	6.5% + 22.00
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**As of: Thursday, February 07, 2019**

Project: Roof Replacement And Weatherproofing At 460-470 Capitol Avenue

8) Glazier (Trade License required: FG-1,2)	37.18	21.05 + a
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9) Ironworker, Ornamental, Reinforcing, Structural, and Precast Concrete Erection	35.47	35.14 + a
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----OPERATORS----

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Group 1: Crane handling or erecting structural steel or stone, hoisting engineer 2 drums or over, front end loader (7 cubic yards or over), work boat 26 ft. and over and Tunnel Boring Machines. (Trade License Required)	39.55	24.30 + a
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Group 2: Cranes (100 ton rate capacity and over); Excavator over 2 cubic yards; Piledriver (\$3.00 premium when operator controls hammer); Bauer Drill/Caisson. (Trade License Required)	39.23	24.30 + a
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Group 3: Excavator; Backhoe/Excavator under 2 cubic yards; Cranes (under 100 ton rated capacity), Grader/Blade; Master Mechanic; Hoisting Engineer (all types of equipment where a drum and cable are used to hoist or drag material regardless of motive power of operation), Rubber Tire Excavator (Drott-1085 or similar); Grader Operator; Bulldozer Fine Grade. (slopes, shaping, laser or GPS, etc.). (Trade License Required)	38.49	24.30 + a
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Project: Roof Replacement And Weatherproofing At 460-470 Capitol Avenue

Group 4: Trenching Machines; Lighter Derrick; Concrete Finishing Machine; CMI Machine or Similar; Koehring Loader (Skooper).	38.10	24.30 + a
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Group 5: Specialty Railroad Equipment; Asphalt Paver; Asphalt Reclaiming Machine; Line Grinder; Concrete Pumps; Drills with Self Contained Power Units; Boring Machine; Post Hole Digger; Auger; Pounder; Well Digger; Milling Machine (over 24" Mandrell)	37.51	24.30 + a
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Group 5 continued: Side Boom; Combination Hoe and Loader; Directional Driller; Pile Testing Machine.	37.51	24.30 + a
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Group 6: Front End Loader (3 up to 7 cubic yards); Bulldozer (rough grade dozer).	37.20	24.30 + a
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Group 7: Asphalt roller, concrete saws and cutters (ride on types), vermeer concrete cutter, Stump Grinder; Scraper; Snooper; Skidder; Milling Machine (24" and under Mandrell).	36.86	24.30 + a
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Group 8: Mechanic, grease truck operator, hydroblaster; barrier mover; power stone spreader; welding; work boat under 26 ft.; transfer machine.	36.46	24.30 + a
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Project: Roof Replacement And Weatherproofing At 460-470 Capitol Avenue

Group 9: Front end loader (under 3 cubic yards), skid steer loader regardless of attachments, (Bobcat or Similar): forklift, power chipper; landscape equipment (including Hydroseeder).	36.03	24.30 + a
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Group 10: Vibratory hammer; ice machine; diesel and air, hammer, etc.	33.99	24.30 + a
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Group 11: Conveyor, earth roller, power pavement breaker (whiphammer), robot demolition equipment.	33.99	24.30 + a
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Group 12: Wellpoint operator.	33.93	24.30 + a
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Group 13: Compressor battery operator.	33.35	24.30 + a
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Group 14: Elevator operator; tow motor operator (solid tire no rough terrain).	32.21	24.30 + a
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**As of: Thursday, February 07, 2019**

Project: Roof Replacement And Weatherproofing At 460-470 Capitol Avenue

Group 15: Generator Operator; Compressor Operator; Pump Operator; Welding Machine Operator; Heater Operator.	31.80	24.30 + a
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Group 16: Maintenance Engineer/Oiler.	31.15	24.30 + a
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Group 17: Portable asphalt plant operator; portable crusher plant operator; portable concrete plant operator.	35.46	24.30 + a
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Group 18: Power safety boat; vacuum truck; zim mixer; sweeper; (Minimum for any job requiring a CDL license).	33.04	24.30 + a
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-----PAINTERS (Including Drywall Finishing)-----

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10a) Brush and Roller	33.62	21.05
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Project: Roof Replacement And Weatherproofing At 460-470 Capitol Avenue

10b) Taping Only/Drywall Finishing	34.37	21.05
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10c) Paperhanger and Red Label	34.12	21.05
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10e) Blast and Spray	36.62	21.05
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11) Plumber (excluding HVAC pipe installation) (Trade License required: P-1,2,6,7,8,9 J-1,2,3,4 SP-1,2)	42.62	31.21
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12) Well Digger, Pile Testing Machine	37.26	24.05 + a
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13) Roofer (composition)	36.70	19.85
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**As of: Thursday, February 07, 2019**

Project: Roof Replacement And Weatherproofing At 460-470 Capitol Avenue

14) Roofer (slate & tile)	37.20	19.85
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15) Sheetmetal Worker (Trade License required for HVAC and Ductwork: SM-1,SM-2,SM-3,SM-4,SM-5,SM-6)	37.50	36.79
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16) Pipefitter (Including HVAC work) (Trade License required: S-1,2,3,4,5,6,7,8 B-1,2,3,4 D-1,2,3,4, G-1, G-2, G-8 & G-9)	42.62	31.21
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-----TRUCK DRIVERS-----

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17a) 2 Axle	29.13	23.33 + a
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17b) 3 Axle, 2 Axle Ready Mix	29.23	23.33 + a
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**As of: Thursday, February 07, 2019**

Project: Roof Replacement And Weatherproofing At 460-470 Capitol Avenue

17c) 3 Axle Ready Mix	29.28	23.33 + a
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17d) 4 Axle, Heavy Duty Trailer up to 40 tons	29.33	23.33 + a
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17e) 4 Axle Ready Mix	29.38	23.33 + a
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17f) Heavy Duty Trailer (40 Tons and Over)	29.58	23.33 + a
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17g) Specialized Earth Moving Equipment (Other Than Conventional Type on-the-Road Trucks and Semi-Trailers, Including Euclids)	29.38	23.33 + a
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18) Sprinkler Fitter (Trade License required: F-1,2,3,4)	43.92	15.84 + a
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**As of: Thursday, February 07, 2019**

Project: Roof Replacement And Weatherproofing At 460-470 Capitol Avenue

19) Theatrical Stage Journeyman	25.76	7.34
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Project: Roof Replacement And Weatherproofing At 460-470 Capitol Avenue

*Welders: Rate for craft to which welding is incidental.*

*\*Note: Hazardous waste removal work receives additional \$1.25 per hour for truck drivers.*

*\*\*Note: Hazardous waste premium \$3.00 per hour over classified rate*

***ALL Cranes: When crane operator is operating equipment that requires a fully licensed crane operator to operate he receives an extra \$4.00 premium in addition to the hourly wage rate and benefit contributions:***

***1) Crane handling or erecting structural steel or stone; hoisting engineer (2 drums or over)***

***2) Cranes (100 ton rate capacity and over) Bauer Drill/Caisson***

***3) Cranes (under 100 ton rated capacity)***

*Crane with 150 ft. boom (including jib) - \$1.50 extra*

*Crane with 200 ft. boom (including jib) - \$2.50 extra*

*Crane with 250 ft. boom (including jib) - \$5.00 extra*

*Crane with 300 ft. boom (including jib) - \$7.00 extra*

*Crane with 400 ft. boom (including jib) - \$10.00 extra*

All classifications that indicate a percentage of the fringe benefits must be calculated at the percentage rate times the "base hourly rate".

Apprentices duly registered under the Commissioner of Labor's regulations on "Work Training Standards for Apprenticeship and Training Programs" Section 31-51-d-1 to 12, are allowed to be paid the appropriate percentage of the prevailing journeymen hourly base and the full fringe benefit rate, providing the work site ratio shall not be less than one full-time journeyman instructing and supervising the work of each apprentice in a specific trade.

*The Prevailing wage rates applicable to this project are subject to annual adjustments each July 1st for the duration of the project.*

*Each contractor shall pay the annual adjusted prevailing wage rate that is in effect each July 1st, as posted by the Department of Labor.*

*It is the contractor's responsibility to obtain the annual adjusted prevailing wage rate increases directly from the Department of Labor's website.*

*The annual adjustments will be posted on the Department of Labor's Web page: [www.ct.gov/dol](http://www.ct.gov/dol). For those without internet access, please contact the division listed below.*

*The Department of Labor will continue to issue the initial prevailing wage rate schedule to the Contracting Agency for the project.*

*All subsequent annual adjustments will be posted on our Web Site for contractor access.*

*Contracting Agencies are under no obligation pursuant to State labor law to pay any increase due to the annual adjustment provision.*

**As of: Thursday, February 07, 2019**



Project: Roof Replacement And Weatherproofing At 460-470 Capitol Avenue

*Effective October 1, 2005 - Public Act 05-50: any person performing the work of any mechanic, laborer, or worker shall be paid prevailing wage*

All Person who perform work ON SITE must be paid prevailing wage for the appropriate mechanic, laborer, or worker classification.

All certified payrolls must list the hours worked and wages paid to All Persons who perform work ON SITE regardless of their ownership i.e.: (Owners, Corporate Officers, LLC Members, Independent Contractors, et. al)

Reporting and payment of wages is required regardless of any contractual relationship alleged to exist between the contractor and such person.

**~~Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clause (29 CFR 5.5 (a) (1) (ii)).**

Please direct any questions which you may have pertaining to classification of work and payment of prevailing wages to the Wage and Workplace Standards Division, telephone (860)263-6790.

**As of: Thursday, February 07, 2019**



## **Information Bulletin** ***Occupational Classifications***

The Connecticut Department of Labor has the responsibility to properly determine "job classification" on prevailing wage projects covered under C.G.S. Section 31-53(d).

***Note: This information is intended to provide a sample of some occupational classifications for guidance purposes only. It is not an all-inclusive list of each occupation's duties. This list is being provided only to highlight some areas where a contractor may be unclear regarding the proper classification. If unsure, the employer should seek guidelines for CTDOL.***

**Below are additional clarifications of specific job duties performed for certain classifications:**

- **ASBESTOS WORKERS**

Applies all insulating materials, protective coverings, coatings and finishes to all types of mechanical systems.

- **ASBESTOS INSULATOR**

Handle, install apply, fabricate, distribute, prepare, alter, repair, dismantle, heat and frost insulation, including penetration and fire stopping work on all penetration fire stop systems.

- **BOILERMAKERS**

Erects hydro plants, incomplete vessels, steel stacks, storage tanks for water, fuel, etc. Builds incomplete boilers, repairs heat exchanges and steam generators.

- **BRICKLAYERS, CEMENT MASONS, CEMENT FINISHERS, MARBLE MASONS, PLASTERERS, STONE MASONS, PLASTERERS. STONE MASONS, TERRAZZO WORKERS, TILE SETTERS**

Lays building materials such as brick, structural tile and concrete cinder, glass, gypsum, terra cotta block. Cuts, tools and sets marble, sets stone, finishes concrete, applies decorative steel, aluminum and plastic tile, applies cements, sand, pigment and marble chips to floors, stairways, etc.

- **CARPENTERS, MILLWRIGHTS. PILEDRIVERMEN. LATHERS. RESILEINT FLOOR LAYERS, DOCK BUILDERS, DIKERS, DIVER TENDERS**

Constructs, erects, installs and repairs structures and fixtures of wood, plywood and wallboard. Installs, assembles, dismantles, moves industrial machinery. Drives piling into ground to provide foundations for structures such as buildings and bridges, retaining walls for earth embankments, such as cofferdams. Fastens wooden, metal or rockboard lath to walls, ceilings and partitions of buildings, acoustical tile layer, concrete form builder. Applies firestopping materials on fire resistive joint systems only. Installation of curtain/window walls only where attached to wood or metal studs. Installation of insulated material of all types whether blown, nailed or attached in other ways to walls, ceilings and floors of buildings. Assembly and installation of modular furniture/furniture systems. Free-standing furniture is not covered. This includes free standing: student chairs, study top desks, book box desks, computer furniture, dictionary stand, atlas stand, wood shelving, two-position information access station, file cabinets, storage cabinets, tables, etc.

- **LABORER, CLEANING**

- The clean up of any construction debris and the general (heavy/light) cleaning, including sweeping, wash down, mopping, wiping of the construction facility and its furniture, washing, polishing, and dusting.

- **DELIVERY PERSONNEL**

- If delivery of supplies/building materials is to one common point and stockpiled there, prevailing wages are not required. If the delivery personnel are involved in the distribution of the material to multiple locations within the construction site then they would have to be paid prevailing wages for the type of work performed: laborer, equipment operator, electrician, ironworker, plumber, etc.

- An example of this would be where delivery of drywall is made to a building and the delivery personnel distribute the drywall from one "stockpile" location to further sub-locations on each floor. Distribution of material around a construction site is the job of a laborer or tradesman, and not a delivery personnel.

- **ELECTRICIANS**

Install, erect, maintenance, alteration or repair of any wire, cable, conduit, etc., which generates, transforms, transmits or uses electrical energy for light, heat, power or other purposes, including the Installation or maintenance of telecommunication, LAN wiring or computer equipment, and low voltage wiring. ***\*License required per Connecticut General Statutes: E-1,2 L-5,6 C-5,6 T-1,2 L-1,2 V-1,2,7,8,9.***

- **ELEVATOR CONSTRUCTORS**

Install, erect, maintenance and repair of all types of elevators, escalators, dumb waiters and moving walks. *\*License required by Connecticut General Statutes: R-1,2,5,6.*

- **FORK LIFT OPERATOR**

Laborers Group 4) Mason Tenders - operates forklift solely to assist a mason to a maximum height of nine (9) feet only.

Power Equipment Operator Group 9 - operates forklift to assist any trade, and to assist a mason to a height over nine (9) feet.

- **GLAZIERS**

Glazing wood and metal sash, doors, partitions, and 2 story aluminum storefronts. Installs glass windows, skylights, store fronts and display cases or surfaces such as building fronts, interior walls, ceilings and table tops and metal store fronts. Installation of aluminum window walls and curtain walls is the "joint" work of glaziers and ironworkers, which require equal composite workforce.

- **IRONWORKERS**

Erection, installation and placement of structural steel, precast concrete, miscellaneous iron, ornamental iron, metal curtain wall, rigging and reinforcing steel. Handling, sorting, and installation of reinforcing steel (rebar). Metal bridge rail (traffic), metal bridge handrail, and decorative security fence installation. Installation of aluminum window walls and curtain walls is the "joint" work of glaziers and ironworkers which require equal composite workforce.

- **INSULATOR**

- Installing fire stopping systems/materials for "Penetration Firestop Systems": transit to cables, electrical conduits, insulated pipes, sprinkler pipe penetrations, ductwork behind radiation, electrical cable trays, fire rated pipe penetrations, natural polypropylene, HVAC ducts, plumbing bare metal, telephone and communication wires, and boiler room ceilings.

- **LABORERS**

Acetylene burners, asphalt rakers, chain saw operators, concrete and power buggy operator, concrete saw operator, fence and guard rail erector (except metal bridge rail (traffic), decorative security fence (non-metal).

installation.), hand operated concrete vibrator operator, mason tenders, pipelayers (installation of storm drainage or sewage lines on the street only), pneumatic drill operator, pneumatic gas and electric drill operator, powermen and wagon drill operator, air track operator, block paver, curb setters, blasters, concrete spreaders.

- **PAINTERS**

Maintenance, preparation, cleaning, blasting (water and sand, etc.), painting or application of any protective coatings of every description on all bridges and appurtenances of highways, roadways, and railroads. Painting, decorating, hardwood finishing, paper hanging, sign writing, scenic art work and drywall hhg for any and all types of building and residential work.

- **LEAD PAINT REMOVAL**

- Painter's Rate

1. Removal of lead paint from bridges.
2. Removal of lead paint as preparation of any surface to be repainted.
3. Where removal is on a Demolition project prior to reconstruction.

- Laborer's Rate

1. Removal of lead paint from any surface NOT to be repainted.
2. Where removal is on a *TOTAL* Demolition project only.

- **PLUMBERS AND PIPEFITTERS**

Installation, repair, replacement, alteration or maintenance of all plumbing, heating, cooling and piping. ***\*License required per Connecticut General Statutes: P-1,2,6,7,8,9 J-1,2,3,4 SP-1,2 S-1,2,3,4,5,6,7,8 B-1,2,3,4 D-1,2,3,4.***

- **POWER EQUIPMENT OPERATORS**

Operates several types of power construction equipment such as compressors, pumps, hoists, derricks, cranes, shovels, tractors, scrapers or motor graders, etc. Repairs and maintains equipment. ***\*License required, crane operators only, per Connecticut General Statutes.***

- **ROOFERS**

Covers roofs with composition shingles or sheets, wood shingles, slate or asphalt and gravel to waterproof roofs, including preparation of surface. (demolition or removal of any type of roofing and or clean-up of any and all areas where a roof is to be relaid.)

- **SHEETMETAL WORKERS**

Fabricate, assembles, installs and repairs sheetmetal products and equipment in such areas as ventilation, air-conditioning, warm air heating, restaurant equipment, architectural sheet metal work, sheetmetal roofing, and aluminum gutters. Fabrication, handling, assembling, erecting, altering, repairing, etc. of coated metal material panels and composite metal material panels when used on building exteriors and interiors as soffits, fascia, louvers, partitions, canopies, cornice, column covers, awnings, beam covers, cladding, sun shades, lighting troughs, spires, ornamental roofing, metal ceilings, mansards, copings, ornamental and ventilation hoods, vertical and horizontal siding panels, trim, etc. The sheet metal classification also applies to the vast variety of coated metal material panels and composite metal material panels that have evolved over the years as an alternative to conventional ferrous and non-ferrous metals like steel, iron, tin, copper, brass, bronze, aluminum, etc. Fabrication, handling, assembling, erecting, altering, repairing, etc. of architectural metal roof, standing seam roof, composite metal roof, metal and composite bathroom/toilet partitions, aluminum gutters, metal and composite lockers and shelving, kitchen equipment, and walk-in coolers. To include testing and air –balancing ancillary to installation and construction.

- **SPRINKLER FITTERS**

Installation, alteration, maintenance and repair of fire protection sprinkler systems.

***\*License required per Connecticut General Statutes: F-1,2,3,4.***

- **TILE MARBLE AND TERRAZZO FINISHERS**

Assists and tends the tile setter, marble mason and terrazzo worker in the performance of their duties.

- **TRUCK DRIVERS**

~How to pay truck drivers delivering asphalt is under REVISION~

Truck Drivers are requires to be paid prevailing wage for time spent "working" directly on the site. These drivers remain covered by the prevailing wage for any time spent transporting between the actual construction location and facilities (such as fabrication, plants, mobile factories, batch plant, borrow pits, job headquarters, tool yards, etc.) dedicated exclusively, or nearly so, to performance of the contract or project, which are so located in proximity to the actual construction location that it is reasonable to include them. ***\*License required, drivers only, per Connecticut General Statutes.***

***For example:***

- Material men and deliverymen are not covered under prevailing wage as long as they are not directly involved in the construction process. If, they unload the material, they would then be covered by prevailing wage for the classification they are performing work in: laborer, equipment operator, etc.
- Hauling material off site is not covered provided they are not dumping it at a location outlined above.
- Driving a truck on site and moving equipment or materials on site would be considered covered work, as this is part of the construction process.

➤ *Any questions regarding the proper classification should be directed to:*  
*Public Contract Compliance Unit*  
*Wage and Workplace Standards Division*  
*Connecticut Department of Labor*  
*200 Folly Brook Blvd, Wethersfield, CT 06109*  
*(860) 263-6543.*



# **Informational Bulletin**

## **THE 10-HOUR OSHA CONSTRUCTION SAFETY AND HEALTH COURSE**

(applicable to public building contracts entered into *on or after July 1, 2007*, where the total cost of all work to be performed is at least \$100,000)

- (1) This requirement was created by Public Act No. 06-175, which is codified in Section 31-53b of the Connecticut General Statutes (pertaining to the prevailing wage statutes);
- (2) The course is required for public building construction contracts (projects funded in whole or in part by the state or any political subdivision of the state) entered into on or after July 1, 2007;
- (3) It is required of private employees (not state or municipal employees) and apprentices who perform manual labor for a general contractor or subcontractor on a public building project where the total cost of all work to be performed is at least \$100,000;
- (4) The ten-hour construction course pertains to the ten-hour Outreach Course conducted in accordance with federal OSHA Training Institute standards, and, for telecommunications workers, a ten-hour training course conducted in accordance with federal OSHA standard, 29 CFR 1910.268;
- (5) The internet website for the federal OSHA Training Institute is [http://www.osha.gov/fso/ote/training/edcenters/fact\\_sheet.html](http://www.osha.gov/fso/ote/training/edcenters/fact_sheet.html);
- (6) The statutory language leaves it to the contractor and its employees to determine who pays for the cost of the ten-hour Outreach Course;
- (7) Within 30 days of receiving a contract award, a general contractor must furnish proof to the Labor Commissioner that all employees and apprentices performing manual labor on the project will have completed such a course;
- (8) Proof of completion may be demonstrated through either: (a) the presentation of a *bona fide* student course completion card issued by the federal OSHA Training Institute; *or* (2) the presentation of documentation provided to an employee by a trainer certified by the Institute pending the actual issuance of the completion card;
- (9) Any card with an issuance date more than 5 years prior to the commencement date of the construction project shall not constitute proof of compliance;

- (10) Each employer shall affix a copy of the construction safety course completion card to the certified payroll submitted to the contracting agency in accordance with Conn. Gen. Stat. § 31-53(f) on which such employee's name first appears;
- (11) Any employee found to be in non-compliance shall be subject to removal from the worksite if such employee does not provide satisfactory proof of course completion to the Labor Commissioner by the fifteenth day after the date the employee is determined to be in noncompliance;
- (12) Any such employee who is determined to be in noncompliance may continue to work on a public building construction project for a maximum of fourteen consecutive calendar days while bringing his or her status into compliance;
- (13) The Labor Commissioner may make complaint to the prosecuting authorities regarding any employer or agent of the employer, or officer or agent of the corporation who files a false certified payroll with respect to the status of an employee who is performing manual labor on a public building construction project;
- (14) The statute provides the minimum standards required for the completion of a safety course by manual laborers on public construction contracts; any contractor can exceed these minimum requirements; and
- (15) Regulations clarifying the statute are currently in the regulatory process, and shall be posted on the CTDOL website as soon as they are adopted in final form.
- (16) Any questions regarding this statute may be directed to the Wage and Workplace Standards Division of the Connecticut Labor Department via the internet website of <http://www.ctdol.state.ct.us/wgwkstnd/wgemenu.htm>; or by telephone at (860)263-6790.

**THE ABOVE INFORMATION IS PROVIDED EXCLUSIVELY AS AN EDUCATIONAL RESOURCE, AND IS NOT INTENDED AS A SUBSTITUTE FOR LEGAL INTERPRETATIONS WHICH MAY ULTIMATELY ARISE CONCERNING THE CONSTRUCTION OF THE STATUTE OR THE REGULATIONS.**

**Connecticut Department of Labor  
Wage and Workplace Standards Division  
FOOTNOTES**

⇒ Please Note: If the “Benefits” listed on the schedule for the following occupations includes a letter(s) (+ a or + a+b for instance), refer to the information below.

Benefits to be paid at the appropriate prevailing wage rate for the listed occupation.

If the “Benefits” section for the occupation lists only a dollar amount, disregard the information below.

**Bricklayers, Cement Masons, Cement Finishers, Concrete Finishers, Stone Masons  
(Building Construction) and  
(Residential- Hartford, Middlesex, New Haven, New London and Tolland Counties)**

- a. Paid Holiday: Employees shall receive 4 hours for Christmas Eve holiday provided the employee works the regularly scheduled day before and after the holiday. Employers may schedule work on Christmas Eve and employees shall receive pay for actual hours worked in addition to holiday pay.

**Elevator Constructors: Mechanics**

- a. Paid Holidays: New Year’s Day, Memorial Day, Independence Day, Labor Day, Veterans’ Day, Thanksgiving Day, Christmas Day, plus the Friday after Thanksgiving.
- b. Vacation: Employer contributes 8% of basic hourly rate for 5 years or more of service or 6% of basic hourly rate for 6 months to 5 years of service as vacation pay credit.

**Glaziers**

- a. Paid Holidays: Labor Day and Christmas Day.

**Power Equipment Operators  
(Heavy and Highway Construction & Building Construction)**

- a. Paid Holidays: New Year’s Day, Good Friday, Memorial day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day, provided the employee works 3 days during the week in which the holiday falls, if scheduled, and if scheduled, the working day before and the working day after the holiday. Holidays falling on Saturday may be observed on Saturday, or if the employer so elects, on the preceding Friday.

**Ironworkers**

- a. Paid Holiday: Labor Day provided employee has been on the payroll for the 5 consecutive work days prior to Labor Day.

**Laborers (Tunnel Construction)**

- a. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day. No employee shall be eligible for holiday pay when he fails, without cause, to work the regular work day preceding the holiday or the regular work day following the holiday.

**Roofers**

- a. Paid Holidays: July 4<sup>th</sup>, Labor Day, and Christmas Day provided the employee is employed 15 days prior to the holiday.

**Sprinkler Fitters**

- a. Paid Holidays: Memorial Day, July 4th, Labor Day, Thanksgiving Day and Christmas Day, provided the employee has been in the employment of a contractor 20 working days prior to any such paid holiday.

**Truck Drivers**

(Heavy and Highway Construction & Building Construction)

- a. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas day, and Good Friday, provided the employee has at least 31 calendar days of service and works the last scheduled day before and the first scheduled day after the holiday, unless excused.

## STATUTE 31-55a

### - SPECIAL NOTICE -

**To: All State and Political Subdivisions, Their Agents, and Contractors**

**Connecticut General Statute 31-55a - Annual adjustments to wage rates by contractors doing state work.**

*Each contractor that is awarded a contract on or after October 1, 2002, for (1) the construction of a state highway or bridge that falls under the provisions of section 31-54 of the general statutes, or (2) the construction, remodeling, refinishing, refurbishing, rehabilitation, alteration or repair of any public works project that falls under the provisions of section 31-53 of the general statutes shall contact the Labor Commissioner on or before July first of each year, for the duration of such contract, to ascertain the prevailing rate of wages on an hourly basis and the amount of payment or contributions paid or payable on behalf of each mechanic, laborer or worker employed upon the work contracted to be done, and shall make any necessary adjustments to such prevailing rate of wages and such payment or contributions paid or payable on behalf of each such employee, effective each July first.*

- The prevailing wage rates applicable to any contract or subcontract awarded on or after October 1, 2002 are subject to annual adjustments each July 1st for the duration of any project which was originally advertised for bids on or after October 1, 2002.
- Each contractor affected by the above requirement shall pay the annual adjusted prevailing wage rate that is in effect each July 1st, as posted by the Department of Labor.
- It is the **contractor's** responsibility to obtain the annual adjusted prevailing wage rate increases directly from the Department of Labor's Web Site. The annual adjustments will be posted on the Department of Labor Web page: [www.ctdol.state.ct.us](http://www.ctdol.state.ct.us). For those without internet access, please contact the division listed below.
- The Department of Labor will continue to issue the initial prevailing wage rate schedule to the Contracting Agency for the project. All subsequent annual adjustments will be posted on our Web Site for contractor access.

**Any questions should be directed to the Contract Compliance Unit, Wage and Workplace Standards Division, Connecticut Department of Labor, 200 Folly Brook Blvd., Wethersfield, CT 06109 at (860)263-6790.**









**\*FRINGE BENEFITS EXPLANATION (P):**

Bona fide benefits paid to approved plans, funds or programs, except those required by Federal or State Law (unemployment tax, worker’s compensation, income taxes, etc.).

Please specify the type of benefits provided:

- 1) Medical or hospital care \_\_\_\_\_ 4) Disability \_\_\_\_\_
- 2) Pension or retirement \_\_\_\_\_ 5) Vacation, holiday \_\_\_\_\_
- 3) Life Insurance \_\_\_\_\_ 6) Other (please specify) \_\_\_\_\_

**CERTIFIED STATEMENT OF COMPLIANCE**

For the week ending date of \_\_\_\_\_,

I, \_\_\_\_\_ of \_\_\_\_\_, (hereafter known as Employer) in my capacity as \_\_\_\_\_ (title) do hereby certify and state:

**Section A:**

1. All persons employed on said project have been paid the full weekly wages earned by them during the week in accordance with Connecticut General Statutes, section 31-53, as amended. Further, I hereby certify and state the following:

- a) The records submitted are true and accurate;
- b) The rate of wages paid to each mechanic, laborer or workman and the amount of payment or contributions paid or payable on behalf of each such person to any employee welfare fund, as defined in Connecticut General Statutes, section 31-53 (h), are not less than the prevailing rate of wages and the amount of payment or contributions paid or payable on behalf of each such person to any employee welfare fund, as determined by the Labor Commissioner pursuant to subsection Connecticut General Statutes, section 31-53 (d), and said wages and benefits are not less than those which may also be required by contract;
- c) The Employer has complied with all of the provisions in Connecticut General Statutes, section 31-53 (and Section 31-54 if applicable for state highway construction);
- d) Each such person is covered by a worker’s compensation insurance policy for the duration of his employment which proof of coverage has been provided to the contracting agency;
- e) The Employer does not receive kickbacks, which means any money, fee, commission, credit, gift, gratuity, thing of value, or compensation of any kind which is provided directly or indirectly, to any prime contractor, prime contractor employee, subcontractor, or subcontractor employee for the purpose of improperly obtaining or rewarding favorable treatment in connection with a prime contract or in connection with a prime contractor in connection with a subcontractor relating to a prime contractor; and
- f) The Employer is aware that filing a certified payroll which he knows to be false is a class D felony for which the employer may be fined up to five thousand dollars, imprisoned for up to five years or both.

2. OSHA~The employer shall affix a copy of the construction safety course, program or training completion document to the certified payroll required to be submitted to the contracting agency for this project on which such persons name first appears.

\_\_\_\_\_  
 (Signature) (Title) Submitted on (Date)







## Additional Forms to Be Submitted After Bond Commission Funding Approval

DAS | Construction Services | Office of Legal Affairs, Policy, and Procurement

<b>Table of Contents</b>	<b>No. of Pages</b>
<b>Performance Bond</b>	<b>2</b>
<b>Labor And Material Bond</b>	<b>2</b>
<b>Surety Sheet</b>	<b>1</b>
<b>Bidder's Certification: Financial Position and Corporate Structure</b>	<b>1</b>

**PERFORMANCE BOND**  
**Know All Men by These Presents**

**THAT** [ ] of the  
Town of [ ], County [ ] and  
State of [ ], as Principal (hereinafter called the Principal),  
and [ ], [ ]

*(Insert place of Business)*

(a surety company authorized to transact business in the State Of Connecticut) as Surety(ies) (hereinafter called the Surety) are held and firmly bound unto the State of Connecticut (hereinafter called the Obligee) in the full penal sum of

[ ]

(\$ [ ] ) Dollars, lawful money of the United States, to be paid to said State of Connecticut, to the which payment well and truly to be made and done, the said Principal binds himself, his heirs, executors, administrators and assigns (or itself, its successors and assigns), and the said Surety (ies) binds itself, its successors and assigns jointly and severally firmly by these presents.

Signed, sealed and delivered this [ ] day of [ ] 20 [ ] .

**THE CONDITION OF THIS OBLIGATION IS SUCH THAT**

**WHEREAS** said Principal will enter into a certain written contract with said Obligee, to be dated-the

[ ] day of [ ] 20 [ ] , which written , as amended, contract shall provide for the following:

**Project Title:** [ ]  
**Project Location:** [ ]  
**Contract Number:** [ ]  
**Project Number:** [ ]

which contract, including any hereafter made extension, modification or alteration thereof, together with all plans and specifications now made or which may hereafter be made in extension, modification or alteration thereof, is hereby referred to, incorporated in, and made a part of this bond as though herein fully set forth.

**NOW, THEREFORE**, if the said Principal shall well and truly keep, perform and execute all the undertaking, covenants, terms, conditions, and agreements of said contract, as it may be extended, modified or altered, and during the *period* of any guaranty required under the contract, according to its provisions on his or its part to be kept and performed or shall indemnify and reimburse the Obligee for any loss that it may suffer through the failure of the Principal to faithfully observe and perform each and every obligation and duty imposed upon the Principal by the said contract, as it may be extended, modified or altered, at the time and in the manner therein specified, then this obligation shall be null and void, otherwise it shall remain and be in full force and effect.

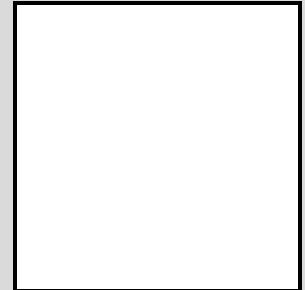
Any alterations which may be made in the terms of the contract, or in the work done or to be done under it, or the giving by the Obligee of any extension of time for the performance of the contract or any other forbearance on the part of either the Obligee or the Principal, one to the other, shall not in any way release the Principal, and/or the Surety(ies) or either of them, their representatives, heirs, executors, administrators, successors or assigns from liability hereunder, and notice to the Surety(ies) of any such alteration, modification, extension or forbearance is hereby specifically and absolutely waived.

In the event that the Surety(ies) assumes the contract or obtains a bid or bids for completion of the contract, the Surety(ies) shall ensure that the contractor chosen to complete the contract is prequalified pursuant to section 4a-100 of the Connecticut General Statutes, in the requisite classification and has the aggregate work capacity rating and single project limit necessary to complete the contract.

**IN TESTIMONY WHEREOF**, the said Principal has hereunto set his / its hand and seal, and the said Surety(ies) has/have caused this instrument to be signed by its/their attorney in fact and its corporate seal to be hereunto affixed, the day and year first written.

**Witness as to Principle**

**SEAL**



(Print Name)

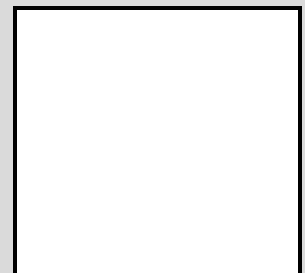
, Its

Duly Authorized

(Print Name)

**Witness as to Surety**

**SEAL**



(Print Name)

by

Its attorney in fact

(Print Name)

**Note:** If more than one surety, add additional lines for additional surety name and address, person signing and title, and two witnesses. Obtain Power of Attorney for each surety.

**End Performance Bond**

**LABOR AND MATERIAL BOND  
Know All Men by These Presents**

**THAT** [ ] of the  
Town of [ ], County [ ] and  
State of [ ], as Principal (hereinafter called the Principal),  
and [ ], [ ]  
(Insert place of Business)

(a surety company authorized to transact business in the State Of Connecticut) as Surety(ies) (hereinafter called the Surety) are held and firmly bound unto the State of Connecticut (hereinafter called the Obligee) in the full penal sum of

[ ]

(\$ [ ] ) Dollars, lawful money of the United States, to be paid to said State of Connecticut, to the which payment well and truly to be made and done, the said Principal binds himself, his heirs, executors, administrators and assigns (or itself, its successors and assigns), and the said Surety (ies) binds itself, its successors and assigns jointly and severally firmly by these presents.

Signed, sealed and delivered this [ ] day of [ ] 20 [ ] .

**THE CONDITION OF THIS OBLIGATION IS SUCH THAT**

**WHEREAS** said Principal will enter into a certain written contract with said Obligee, to be dated the

[ ] day of [ ] 20 [ ] , which written, as amended, contract shall provide for the following:

**Project Title:** [ ]

**Project Location:** [ ]

**Contract Number:** [ ]

**Project Number:** [ ]

which contract, including any hereafter made extension, modification or alteration thereof, together with all plans and specifications now made or which may hereafter be made in extension, modification or alteration thereof, is hereby referred to, incorporated in, and made a part of this bond as though herein fully set forth.

**NOW, THEREFORE**, if the said Principal shall promptly pay for all materials furnished and labor supplied or performed in the prosecution of the work included in and under the aforesaid contract, as it may be extended, modified or altered, and/or required by the General Statutes of Connecticut, as amended, whether or not the material or labor enters into and becomes a component part of the real asset, then this obligation shall be null and void, otherwise it shall remain and be in full force and effect. This bond is provided pursuant to Section 49-41 et seq. of the General Statutes of Connecticut and shall be governed thereby.

Any party, whether a subcontractor or otherwise, who furnishes materials or supplies or performs labor or services in the prosecution of the work under said contract, as it may be extended, modified or altered, and who is not paid therefor, may bring a suit on this bond in the name of the person suing and prosecute the same to final execution and judgment for such sum or sums as may be justly due.

Any alterations which may be made in the terms of the contract, or in the work done or to be done under it, or the giving by the Obligee of any extension of time for the performance of the contract or any other forbearance on the part of either the Obligee or the Principal, one to the other, shall not in any way release the Principal, and/or the Surety(ies) or either of them, their representatives, heirs, executors, administrators, successors or assigns from liability hereunder, and notice to the Surety(ies) of any such alteration, modification, extension or forbearance is hereby specifically and absolutely waived.

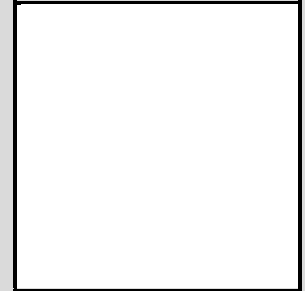


In the event that the Surety(ies) assumes the contract or obtains a bid or bids for completion of the contract, the Surety(ies) shall ensure that the contractor chosen to complete the contract is prequalified pursuant to section 4a-100 of the Connecticut General Statutes, in the requisite classification and has the aggregate work capacity rating and single project limit necessary to complete the contract.

**IN TESTIMONY WHEREOF**, the said Principal has hereunto set his / its hand and seal, and the said Surety(ies) has/have caused this instrument to be signed by its/their attorney in fact and its corporate seal to be hereunto affixed, the day and year first written.

**Witness as to Principle**

**SEAL**



(Print Name)

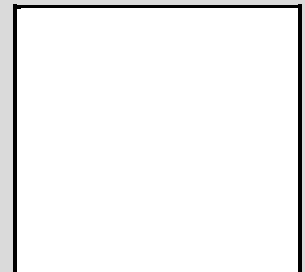
, Its

Duly Authorized

(Print Name)

**Witness as to Surety**

**SEAL**



(Print Name)

by

Its attorney in fact

(Print Name)

**Note:** If more than one surety, add additional lines for additional surety name and address, person signing and title, and two witnesses. Obtain Power of Attorney for each surety.

**End Labor and Material Bond**

## Surety Sheet

State Of Connecticut  
Department of Administrative Services, Construction Services  
Office of Legal Affairs, Policy, and Procurement  
450 Columbus Boulevard, Suite 1302  
Hartford, CT 06103

### 1. Surety Company

Name of Surety Co.:

Address of Home Office:

Telephone Number:

### 2. Agent

Name of Surety Co.:

Address of Agency:

Telephone Number:

Attorney-In-Fact:

Telephone Number:

DAS Project Number:

Contractor's Name:

*End Surety Sheet*

**Bidder's Certification:  
Financial Position and Corporate Structure**

*(Your Name)*

*(Name Of Company)*

Pursuant to C.G.S. § 4b-91(e), as amended, the bidder for this contract (hereinafter "bidder"), certifies under penalty of false statement that the information in the bid is true, that there has been no substantial change in the bidder's financial position or corporate structure since its most recent prequalification certificate was issued or renewed, other than those changes noted in the update statement, and that the bid was made without fraud or collusion with any person.

*(Signature)*

*(Print Name)*

*(Date)*

*(DAS Project Number)*

***End Bidder's Certification: Financial Position and Corporate Structure***

**End of Section 00 92 10  
Additional Forms To Be Submitted After Bond Commission Funding Approval**



## Procedures Regarding Taxation For Nonresident General / Prime Contractor and Subcontractors

**DAS | Construction Services | Office of Legal Affairs, Policy, and Procurement**

According to [Connecticut General Statutes § 12-430\(7\)](#), there are two types of Nonresident Contractors and Subcontractors (*Verified* or *Unverified*) who are required to furnish security for Connecticut taxes arising from jobs performed in Connecticut.

Detailed information can be found by visiting the Connecticut Department of Revenue Services (DRS) website at [www.ct.gov/drs](http://www.ct.gov/drs):

- Under the “**For Businesses**” title, click on “**Withholding Tax**”;
- Click on “**Registering**”;
- Click on “**5. What tax types do I need to register for with DRS**”;
- Read the information for “**Out-of-State**” contractors.
- Click on “[SN 2012\(2\)](#)” for the “Procedure Governing Nonresident Contractors”.

Forms can be downloaded from the DRS website ([www.ct.gov/drs](http://www.ct.gov/drs)) as follows:

- Click on “**Forms**” at the top of the page;
- Under “**Current Year Forms**”:
  - Click on “**Miscellaneous Tax Forms**”;
  - Click on “**Bond Forms**”
- Download the appropriate form.

For questions regarding the nonresident contractor bond law, call **DRS** at **860-541-7538**.

### 1.0 Verified Nonresident Contractors and Subcontractors

Verified Nonresident Contractors are treated just like Resident Contractors. A Verified Nonresident General or Prime Contractor is not required to file a surety bond with DRS. A Verified Nonresident Subcontractor is not required for the General or Prime Contractor to hold back a portion of the amount owed the Subcontractor under the contract.

#### 1.1 Verification Procedure for General/Prime Contractors and Subcontractors:

**1.1.1 Register with DRS** via REG-1 for all appropriate taxes.

**1.1.2 Submit Form AU-960 “Nonresident Contractor Request for Verified Contractor Status” to DRS.** If you have a 3 year filing history with DRS and no delinquencies, then just complete **Part I & Part I**, otherwise go to **Part III**.

**1.1.3 Submit Form AU-961 “Verification Bond” to DRS.**

**1.1.4** If Verified by DRS, submit “**Notice of Verified Status**” (Verification Letter issued by DRS) to the Connecticut Department of Administrative Services / Construction Services (DAS/CS) Office of Legal Affairs, Policy, and Procurement as specified in Section 00 41 00 Bid Proposal Form.

**2.0 Unverified Nonresident Contractors and Subcontractors  
(for Contracts Greater Than \$250,000):**

The requirements for Unverified Nonresident Contractors and Unverified Nonresident Subcontractors (for Contracts greater than \$250,000) are different for General/Prime Contractors and their Subcontractors:

**2.1 Unverified Nonresident General or Prime Contractors:**

- 2.1.1 Submit **Form AU-964 “Surety Bond and Release” to DRS**. The Unverified Nonresident General/Prime Contractor is required to file a good and valid surety bond with DRS using Form AU-964 “Surety Bond and Release” for 5% of the contract price to secure payment of required taxes by both the General/Prime Contractor and its Subcontractors.
- 2.1.2 The General/Prime Contractor must provide proof to DAS/CS that they have posted a good and valid surety bond with DRS by providing a copy of **Form AU-965 “Acceptance of Surety Bond”** that verifies acceptance of the bond by DRS\*.

**2.2 Unverified Nonresident Subcontractors:**

- 2.2.1 The Resident or Verified or Unverified Nonresident General/Prime Contractor is required to hold back 5% of its payments to the Unverified Nonresident Subcontractor. The General/Prime Contractor must keep the hold-backs in a special fund in trust for the state.
- 2.2.2 The Unverified Nonresident Subcontractor can request that the money be released from the General/Prime Contractor by submitting **Form AU-967 “Request for Certificate of Compliance” to DRS**. It must be signed by the General/Prime Contractor and the Nonresident Subcontractor and submitted to **DRS within 90 days of the completion date**.
- 2.2.3 If **Form AU-968 “Certificate of Compliance”** is issued by DRS, DRS will instruct the General/Prime Contractor holding back the 5% to release the withheld amount to the Nonresident Subcontractor. If the “Certificate of Compliance” is denied or not requested within **90 days of the completion date of the contract**, the General/Prime Contractor holding back the 5% will remit the withheld amount on their own Sales & Use tax returns.
- 2.2.4 The 5% holdback does not take the place of any tax returns due from the Unverified Nonresident Contractor.
- 2.2.5 The General/Prime Contractor must give the Unverified Nonresident Subcontractor written notice of the hold-back requirements by the time the Subcontractor begins work under the contract.

\*Document(s) must be submitted to the DAS/CS Office of Legal Affairs, Policy, and Procurement as specified in Section 00 41 00 “Bid Proposal Form”.

**End of Section**

**00 92 30 Procedures Regarding Taxation  
For Nonresident General/Prime Contractor & Subcontractors**

## PART 1 – GENERAL

### 1.1 DEFINITIONS

#### A. Contractor:

Whenever the term "**Contractor**" is used in these Division 01 General Requirements and the Contract Documents, it may be understood to mean the **Design-Bid-Build (D-B-B) "General Contractor"** as applicable to the specific Project.

#### B. Contract:

Whenever the term "**Contract**" is used in these Division 01 General Requirements and the Contract Documents, it may be understood to mean the **D-B-B General Contractor's Contract Sum** as stated in their Contract.

### 1.2 RELATED DOCUMENTS

- A. The Contract Documents are defined in the D-B-B Division 00 General Conditions, as applicable to the specific Project.
- B. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

### 1.3 WORK COVERED BY CONTRACT DOCUMENTS

#### A. Project Delivery Method:

- 1.  Design-Bid-Build (DBB);

#### B. Project Number: BI-2B-433

#### C. Project Title: Roof Replacement and Weatherproofing.

#### D. Project Location: 460 / 470 Capitol Avenue, located in Hartford, Connecticut.

#### E. The Project Description:

- 1. Roofing replacement of approximately **26,500** gross square feet. Refer to 1.3J for more information.
- 2. The buildings are existing; however, work installed as part of this project shall be new unless designated as salvaged for reuse. Construction shall consist of:
  - a. Phasing and coordination with the building Owner and occupants during removal and repair work to provide advanced notification, interior protection, and cleaning.
  - b. Building 460 Occupancy / Interior protection: Contractor to provide temporary covers for desks, remaining furniture, carpets, horizontal surfaces, vertical surfaces, partitions and items not removed by DAS. In addition, seal 100% open stair tower, stairwells, elevator doors, and roof-to-wall perimeter reflecting the ACM location plan. DAS to move personnel, personal items, documents, computer hardware, and loose items and clear desktops and horizontal surfaces.
  - c. Building 470 Occupancy / Interior protection: Work above the cafeteria salad bar and serving areas will be limited to after 2:00PM or weekends. This includes skylight replacement, curb and penetration flashing, and expansion joint replacements. Temporary protection will be required for interior spaces during this work.
  - d. Removal of the existing roof assemblies down to structural decks and installation of new roof assemblies to include: vapor retarder, base board (over wood decks at Building 460), code-compliant thermal insulation (excluding Building 460 penthouse), coverboard, and membrane roofing
  - e. Fully-adhered roof assembly at Building 470 and mechanically attached/adhered assembly at Building 460
  - f. Modification and restoration of existing roof drains at Building 470 and replacement of roof drains at Building 460
  - g. Removal, and/or reinstallation of existing curbs, utilities, and mechanical equipment
  - h. Modifications to and maintenance of existing stairs
  - i. Masonry restoration of the existing parapet and roof edge at Building 460
  - j. Restoration of existing clerestory skylights at Building 460
  - k. Wood enclosures at Building 460 penthouse window and door openings

- I. Door threshold repairs and perimeter sealant at Building 460 access door
  - m. Louver at Building 460 window opening
  - n. Replacement skylights at Building 470
  - o. Raising the existing chilled water line at Building 470
  - p. Roofing and flashing tie-ins to warranted asphalt shingle roof areas at Building 470
  - q. Two (2) new ground-mounted flag poles in front of Building 470 including site work, foundations, complete pole assemblies, flags, and solar lights
3. The Authorities Having Jurisdiction for Threshold Projects, Non-Threshold Projects, and/or Connecticut State University System (CSUS) 2020 Projects, as defined by the Connecticut General Statutes, are the Connecticut Department of Administrative Services (DAS) / Construction Services (CS) Office of State Building Inspector (OSBI) and Office of State Fire Marshal (OSFM).
- F. Owner:**
1. **Owner's Name:** The Owner is the State of Connecticut, Department of Administrative Services.
  2. **Authorized Representative for the Owner: DAS Project Manager Name: Ronald J. Wilfinger**
    - a. **DAS Project Manager's Location:** The DAS Project Manager is located at 450 Columbus Blvd, Suite 1201, Hartford, CT, 06103.
    - b. **Phone: 860.713.5648**
    - c. **Fax: 860.707.1932;**
    - d. **Email(s): Ronald.Wilfinger@ct.gov.**
  3. **Authority:** The DAS Project Manager is the only authorized representative for the Department of Administrative Services Commissioner to act in matters involving revoking, altering, enlarging or relaxing 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.
- G. Agency:**
1. **Agency Name:** The Connecticut State (User) Agency is **CT Department of Administrative Services Facilities Management Division (DAS | FM).**
  2. **Agency Representative Name and Title: Richard Terrell.** The Agency Representative's Title is **Architect.**
    - a. **Agency Representative Location:** The Agency Representative is located at 450 Columbus Blvd, Suite 1403, Hartford, CT, 06103.
    - b. **Phone: 860.713.5717**
    - c. **Fax: 959.200.4782**
    - d. **Email(s): richard.terrell@ct.gov**
  3. **Authority:** The Agency Representative has the administrative authority for the facility and or site where the work is being performed but does not have the authority to change the Contract Documents or direct the Contractor.
- H. Architect and Engineer (A/E):**
1. **Architect's Name:** The Engineering firm is **Gale Consultants, Inc.** The Engineer representing the firm for this project is Marc A. Loranger, P.E.
    - a. **Architect's Location:** The Architect is located at **703 Hebron Avenue, Glastonbury, CT 06033.**
    - b. **Phone: 860.430.5660;**
    - c. **Fax: 860.430.9072;**
    - d. **Email(s): mal@gainc.com.**
  2. 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:
    - a. The Architect and Engineer will not make interpretations or decisions directly to the Contractor. All interpretations or decisions will be conveyed through the Construction Administrator to the DAS Project Manager.





16. Replace deteriorated wood decking and blocking (quantity allowance and unit price);
  17. Refasten wood decking 100%;
  18. Refasten existing wood blocking and provide new blocking to accommodate increased thermal insulation;
  19. Provide new plywood sheathing (quantity allowance and unit price);
  20. Provide code-compliant R-30 thermal insulation in new roof assemblies;
  21. Restore existing sawtooth clerestory skylights – provide new glazing, sealant, and joinery, new membrane roofing and base flashings, and new sheet metal flashings;
  22. Provide new roof drains in wood decks and extend leaders to accommodate increased thermal insulation;
  23. Restore existing roof drains in concrete decks and provide new extension collars to accommodate increased thermal insulation;
  24. Extend existing vent pipes relative to finished roof surface(s);
  25. Remove, store, and reinstall existing equipment and utilities scheduled to remain;
  26. Remove and replace existing equipment as indicated;
  27. Remove and dispose of existing, abandoned equipment where indicated and provide roof deck infill;
- K. The Contractor will include in their bid, all items required in order to carry out the intent of the Work as described, shown and implied in the Contract Documents.
- L. It shall be the Contractor's responsibility upon discovery to immediately notify the Construction Administrator, in writing, of errors, omissions, discrepancies, and instances of noncompliance 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.
- M. The Work will be constructed under the Contractor's Contract as applicable to this Project.

#### 1.4 WORK SEQUENCE (PHASES)

- A. **Related Documents:** Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
- B. The entire Project shall be constructed in **Three** Phases. Work of these Phase(s) shall be substantially complete, ready for occupancy within **120** Calendar Days of commencement of the Work (the "**Contract Time**"). The following phasing is a suggested method of achieving this goal. Actual phasing remains the Contractor's responsibility as part of means and methods.
- C. Phase **One** shall include roof replacement and associated work at **Building 470** including all labor and material, as shown on the drawings and/or as specified hereinafter. The intent of Phase **One** is to complete work at Roof Areas A and B and includes but is not limited to the following:
1. **Interior protection, coordinated with the roof removal operations.**
  2. **All work shown and specified for roofing removal and replacement, Division 02 and 07 work;**
  3. **All Division 03 Concrete restoration work (repair of existing deck substrates);**
  4. **All Division 05 Metals work**
  5. **All Division 06 Carpentry work**
  6. **All Mechanical and Electrical Work, materials and labor, as specified and/or as shown on the drawings as follows:**
    - a. **Restoration of roof drains;**
    - b. **Removal of gas piping;**
    - c. **Removal of designated equipment and supports;**
    - d. **Replacement of roof curbs and supports for equipment to remain;**
    - e. **Disconnect and reconnect equipment in order to perform the roofing work;**
    - f. **Recommission and confirmed functionality of existing equipment following interruption(s).**

- D. Phase **Two** shall include roof replacement and associated work at **Building 460** including all labor and material, as shown on the drawings and/or as specified hereinafter. The intent of Phase **Two** is to complete work at Roof Areas C, D, and E and includes but is not limited to the following:
1. **Interior protection, coordinated with the roof removal operations.**
  2. **All work shown and specified for roofing removal and replacement, Division 02 and 07 work;**
  3. **All Division 04 Masonry work**
  4. **All Division 05 Metals work**
  5. **All Division 06 Carpentry work**
  6. **All Mechanical and Electrical Work, materials and labor, as specified and/or as shown on the drawings as follows:**
    - a. **Replacement of existing roof drains;**
    - b. **Removal of designated equipment and supports;**
    - c. **Replacement of roof curbs and supports for equipment to remain;**
    - d. **Disconnect and reconnect equipment in order to perform the roofing work;**
    - e. **Recommission and confirmed functionality of existing equipment following interruption(s).**
- E. Phase **Three** shall include work related to the two (2) new **flag poles** at **Building 470** including all labor and material, as shown on the drawings and/or as specified hereinafter. The intent of Phase **Three** is to complete the installation of concrete foundations, flag poles, and exterior lighting work and includes but is not limited to the following:
1. **All excavation work required to install Cast-In-Place concrete foundations;**
  2. **All Division 03 Concrete foundation work and flag pole supports;**
  3. **All Division 05 Metals work including flag poles;**
  4. **All Electrical Work, materials and labor, to complete the exterior lighting system**
  5. **All landscape restoration work following at the completion of the flag pole installation**

#### 1.5 CONTRACTOR'S USE OF PREMISES

- A. **Use of the Site:** Limit use of the premises to work in areas indicated. Confine operations to areas within contract limits indicated. Do not disturb portions of the site beyond the areas in which the Work is indicated.
1. **Owner Occupancy:** Allow for Owner occupancy and use by the public of the existing facility.
  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 free and clear at all times. All deliveries for the project are to enter the **460 / 470 Capitol Avenue** property from **Capitol Avenue. Storage and hoisting shall take place from the north side of the building(s).** The Contractor shall check all roadways for accessibility and clearances for deliveries of all large material and equipment. The Contractor shall inform the Construction Administrator at least **seventy-two (72)** hours in advance of these deliveries so they can be coordinated with the Agency so appropriate traffic control, etc. can be provided. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
  4. The Contractor shall be responsible for keeping the premises clean and shall pick up rubbish and debris and promptly remove from site.
  5. Parking for the Contractor's employees will be limited to an area designated by the Construction Administrator, and the Contractor may be required to provide identification stickers for all employees' cars.
  6. Special precautions shall be taken to protect all wetland areas 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.
  7. The Contractor shall comply with local working hour restrictions, unless specifically approved otherwise in writing by the Owner.
  8. No signs, other than those approved by the Construction Administrator, will be visible on the premises.

- B. Use of the Existing Building:** The existing roof access points are to be used for emergency egress only. Contractor is to provide exterior roof access for the duration of the Construction project. Maintain the existing building in a weather-tight condition throughout the construction period. Repair damage caused by construction operations. Take all precautions necessary to protect the building and its occupants during the construction period. Contractor to develop and follow and construction phasing / sequencing plan in coordination with the Owner that outlines the impact to the building occupants on a weekly basis. Contractor personnel are not allowed to use the Cafeteria or vending machines within the existing buildings unless authorized in writing by the agency.

#### 1.6 OCCUPANCY REQUIREMENTS

- A. Full Agency Occupancy During Construction:** The Owner reserves the right to allow the Agency to occupy the site and existing building during the entire construction period. Cooperate with the Agency during construction operations to minimize conflicts and facilitate Agency usage. Perform the Work so as not to interfere with the Agency's operations.

1. The Agency intends to vacate the top floor of Building 460 during the project. Building 470 will remain occupied for the duration.
2. Provide adequate building and fire code egress from the buildings during the renovation process and/or as indicated on the Contract Documents. The Contractor will be responsible to maintain and protect egress ways during the construction sequence as required and/or indicated in the Contract documents. The Contractor shall be responsible for preparing egress plans for Owner approval and for DAS Office of State Building Official and Office of State Fire Marshal for approval if required.

**B. Agency Occupancy:**

1. The Construction Administrator will determine whether such occupancy is possible and, if so, will make arrangements for holding a job inspection with the DAS/CS Project Manager, Agency Representative, and Contractor.
2. A comprehensive list of items to be completed or corrected as issued by the Contractor, together with the status of completion and terms of occupancy, will be forwarded to the DAS/CS Project Manager and the Contractor by the Construction Administrator. A letter will be issued by the DAS/CS Project Manager and Contractor to Construction Administrator granting such occupancy and will state the terms and conditions of occupancy.
3. Prior to Agency occupancy, mechanical and electrical systems shall be fully operational. Required inspections and tests shall have been successfully completed. Upon occupancy, the Agency will operate and maintain mechanical and electrical systems serving occupied portions of the building.
4. The Architect will prepare a "Certificate of Substantial Completion" for the Work to be occupied prior to Agency occupancy. Use the "Certificate of Substantial Completion" form as required by the Owner.
5. The DAS/CS Project Manager will request a signed "Certificate of Compliance" from Commissioner of the Department of Administrative Services, Architect, and Contractor, if required.

#### 1.7 MISCELLANEOUS PROVISIONS

**A. Examination of Site:**

1. It is not the intent of the Documents to show all existing conditions. All Contractors and Subcontractors are advised to attend the Mandatory Pre-Bid Meeting prior to submitting their Bid Proposals. This is the only official opportunity to visit and examine the site with the Owner, Agency, Architect, Engineer and Construction Administrator.
2. The Contractor should investigate and satisfy himself 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 himself 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 himself with the available information shall not relieve him from the responsibility for estimating properly the difficulty and cost of successfully performing the Work.

3. If tests have been done for Asbestos Containing Material (ACM), Lead-Based Paint (LBP) Containing Material, Polychlorinated Biphenyls (PCBs) in Building Materials and/or Mold, then the results are referenced in **Section 00 30 00 General Statements for Available Information and provided in Division 50 00 00 Project-Specific Available Information**. See **Division 01 Section 01 35 16 "Alteration Project Procedures"** for **removal responsibility** and additional information.
  4. No attempt has been made to locate hazardous material associated with existing site utilities, though it is presumed that at least some asbestos may be discovered associated with underground piping during the course of site and site utilities work. If and when such materials appear, the Contractor shall notify the Owner, who shall direct additional work outside of this Contract to assist in cutting up and disposing of same. The Contractor shall assist the hazardous materials contractor(s) with excavating, heavy lifting, and the like at no additional cost to the Owner.
- B. Pre-Bid Meeting:**
1. A Mandatory Pre-Bid Meeting and tour of the site will be conducted as scheduled in Division 00 Section 00 11 16 "Invitation to Bid". This scheduled meeting is the only official opportunity for the bidders to tour the site with the Owner, Architect, Engineer, Construction Administrator, and Agency.
- 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):** Site Logistics Plan(s) for this Project are in the Contract Documents. The Site Logistics Plan(s) describe in detail the proposed use of the Site and Building, both inside and outside the Contract Limit Area.
1. **Related Section:** Section 01 31 00 "Project Management and Coordination", 1.5 Submittals, A, (4).
  2. The **Site Logistics Plan(s)** include, but are not be limited to the following information:
    - a. **Phasing requirements;**
    - b. **Interior protection, coordinated with roof phasing;**
    - c. **Proposed vehicle and equipment access routes;**
    - d. **Locations of proposed staging/lay-down and storage areas, utility connections;**
    - e. **Delivery access of materials, handicap access;**
    - f. **Maintenance of existing building egress;**
    - g. **Temporary access-ways;**
    - h. **Location of perimeter construction fencing and gates;**
    - i. **Other protection measures in and around the building(s);**
    - j. **Temporary partitions, proposed pedestrian traffic flows around and in each building;**
    - k. **Proposed roof access points;**
    - l. **Proposed protection measures for trees, shrubs and plantings, interior access-ways;**
    - m. **Coordination of activities that relate to building occupants and other field applied measure to protect and coordinate the work including any relocation of utilities.**
- E. Scope Review:**
1. Prior to signing a Contract with the State, DAS will conduct a full scope review with the apparent Low Bidder to ensure that all of the requirements have been included within the bid. This scope review will highlight all of the specific requirements of the project, a review of the DAS procedures and all of the Technical sections of the contract documents.
  2. This process will ensure that all of the scope of work included in the contract documents has indeed been included.
- F. Specifications, Drawings, and Electronic Data Storage Devices Furnished:**
- a. The Contractor shall receive **ten (10)** sets 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.
  - b. The Contractor shall receive **one (1)** set of AutoCAD compatible (latest version) Floor Plans on Electronic Data Storage Devices at no cost on or about the time of execution of the Contract from the Architect.

Additional sets of AutoCAD compatible (latest version) Floor Plans on Electronic Data Storage Devices from the Architect shall be available at the cost of their reproduction, to the Contractor.

**F. Construction Responsibility:**

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

- G.** 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 Sum as stated in Division 00 Section 00 41 00 "Bid Proposal Form."

**H. PMWeb Project Management:**

1. DAS 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 DAS Project Manager shall arrange for training. This training is for the Contractor's Staff, the DAS Project Manager, the Construction Administrator, the A/E, and their representatives.
4. DAS has established the following project specific email "file" address for this project, 'DAS.2B433@ct.gov'. 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 DAS Project Manager and the project specific email "file" address. The hard copy of the wet signature documents shall be transmitted as directed by the DAS Project Manager. This includes, but is not limited to all contracts, change orders, applications for payment, closeout documentation, etc.

**I. Reporting and Contracting Requirements for Contractor and Subcontractor Payments:**

1. For compliance with C.G.S. Sec. 4b-95 and 49-41, 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, BizNet, 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: The state will pay the Contractor on a monthly basis 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, BizNet, 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 in BizNet", available for download by going to the DAS Homepage ([www.ct.gov/DAS](http://www.ct.gov/DAS)) and selecting Doing Business With The State > State Building Construction > Publications and Forms > DAS Construction Services Library > 6000 Series.

**PART 2 - PRODUCTS (Not Applicable)**

**PART 3 - EXECUTION (Not Applicable)**

**END OF SECTION 01 11 00**

## PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

- A. Contract Documents and general provisions of the Contract, including General and Supplementary Conditions, other Division 01 Specification Sections, and Section 00 41 00 "Bid Proposal Form" apply to this Section.

### 1.2 SUMMARY

- A. This Section includes the following:
  - 1. Unit Prices.
- B. **Related Sections:** The following Sections contain requirements that relate to this Section:
  - Section 01 26 00 Contract Modification Procedures
  - Section 01 29 76 Progress Payment Procedures
  - Section 01 35 16 Alteration Project Procedures
  - Section 01 35 26 Government Safety Requirements
  - Section 01 77 00 Closeout Procedures
  - Section 02 41 00 Selective Demolition
  - Section 02 82 13 Asbestos Abatement
  - Section 02 82 13 Asbestos Containing Roofing Material Abatement
  - Section 02 83 00 Lead Paint Activity
  - Section 02 84 33 Removal and Disposal of PCBs.
  - Section 03 01 00 Concrete Restoration
  - Section 04 50 00 Masonry
  - Section 06 10 00 Rough Carpentry

### 1.3 UNIT PRICES - GENERAL

- A. This Section includes administrative and procedural requirements for unit prices.
- B. **Related Sections:** The following Sections contain requirements that relate to this Section:
  - 1. Division 01 Section 01 26 00 "Contract Modification Procedures" for procedures for submitting and handling Change Orders.
  - 2. Division 01 Section 01 29 76 "Progress Payment Procedures" for procedures for submitting Application for Payments.
- C. **Definition - Unit Price:** Amount the Contractor acknowledges in the Bid Proposal Form as a price per unit of measurement for materials or services as described in the Bidding Documents or in the Contract Documents.
- D. **Procedures:**
  - 1. Unit Prices included in the Contract Documents are to be used for determining compensation to the Contractor or Owner for changes to the scope of the work indicated in the Contract Documents, and included in the Lump Sum Contract Price. Special Unit Prices are for items complete, in place, and shall be inclusive of furnishing and installing of all material, labor, trucking, overhead, profit, equipment, hoisting, excavation, stockpiling, loading, engineering, scaffolding, power hookups, protection, shop drawings, taxes, permits, appliances, delivery, disposal, insurance, supervision, cost of bond, etc. and shall remain in effect until completion of the Contract.
  - 2. **Unit Price:** Is identified by the Owner as a price per unit of measurement for materials or services added to or deducted from the Contract Sum by appropriate modification, if the estimated quantities of Work required by the Contract Documents are increased or decreased.
  - 3. **Increases or Decreases:** Should the amount of the Work required be increased or decreased because of changes in the work ordered in writing by the DAS Project Manager, the Contractor agrees that the following supplemental UNIT PRICES will be decreased 10% for a reduction of work. Each Unit Price shall include all equipment, tools, labor, permits, fees, etc., incidental to the completion of the work involved. All items marked with an asterisk (\*) in the unit price schedules shall include the completion of

the excavation, formation and compaction of sub-grade and the disposal of surplus or unsuitable materials in accordance with the Plans and Specifications or as directed by the Construction Administrator.

4. 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.
5. **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.
6. **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.

**1.4 UNIT PRICE SCHEDULES - ALTERATIONS**

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

**B. Unit Price Schedule – Alterations:**

1. Unit Price Schedule – Miscellaneous Items						
Section Number &/or Drawing Number	Item Description	Base Bid Quantity	Unit of Measurement	\$ Add Unit Price	\$ Deduct Unit Price	
03 01 00	Concrete crack repair	150	Linear feet	\$ 15.00	\$ 13.50	
03 01 00	Concrete spall repair	50	Square feet	\$ 65.00	\$ 58.50	
04 50 00	Masonry repointing	300	Square feet	\$ 24.00	\$ 21.60	
04 50 00	Masonry rebuilding	50	Square feet	\$ 90.00	\$ 81.00	
06 10 00	Wood blocking	250	Board feet	\$ 4.60	\$ 4.14	
06 10 00	Wood plank decking	500	Square feet	\$ 11.75	\$ 10.575	
06 10 00	Plywood sheathing	320	Square feet	\$ 3.50	\$ 3.15	
22 20 00	Replacement drain bowls in concrete	2	Each	\$	\$	

2. The Add/Deduct Unit Prices shown in the table above are a **price per unit measurement** for materials, services, or work added to or deducted from the Contract Sum by appropriate modification **if the Base Bid Quantities** of the Work listed in the above Schedule and described in the corresponding Section and/or Drawing are **increased or decreased**.
3. The **Base Bid Quantities** for each type of Work listed in the above Schedule and described in the corresponding Section shall be included in the **Lump Sum Bid**.
4. Unit Prices shall be negotiated if there is a change in scope of work

**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 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. Mock-ups and test areas.

- f. 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.
  - g. Cost information, broken down, including a proposal of the net change, if any in the Contract Sum.
  - h. 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.
  - i. 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**



**7001  
Equal or Substitute  
Product Request**

Page 1 of 2

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:



7001  
Equal or Substitute  
Product Request

Page 2 of 2

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

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## 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 "Construction Progress Schedules" for requirements for construction 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](http://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 860-297-5962.
    - 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
- B. "Change Order Request" Forms: Use "Change Order Proposal" and "Change Order Proposal Worksheets" forms as required by Owner.
- C. 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.
- D. 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**

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## 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 "Construction Progress Schedules" for requirements for construction 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 (1) 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 1/10<sup>th</sup> of one percent of the base bid total project cost or \$5,000 whichever is greater.
  - c. **Photographic Documentation (01 32 33):** a monthly cost of \$1,000 per month to be paid each month upon receipt of the photographs or forfeit of that month's payment.
  - d. **Submittal Schedule (01 33 00):** a lump sum payment calculated at 1/20<sup>th</sup> of 1% of the base bid total project cost upon receipt of the schedule
  - e. **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.
  - f. **As-Built Updates (01 31 00):** a monthly cost, a minimum payment of \$1,000 with forfeit of that monthly payment if not done.
  - g. **Schedule (01 32 16):** For the Base Schedule a lump sum payment or 40% of the total schedule budget, with the remainder paid on an even payment over the duration of the project.
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:** Except for final payment, submit to the Construction Administrator by a method ensuring receipt within **forty-eight (48)** hours. **One (1)** complete, signed, and notarized original of each Application for Payment, including lien waivers and similar attachments when required, along with **six (6)** copies. For Final Payment, **nine (9)** complete, signed, and notarized copies shall be submitted.
1. Transmit each copy with a transmittal form listing attachments and recording appropriate information related to the application, in a manner acceptable to the 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:

<b>Contractor's Master Subcontract Agreement List</b>				
<b>Subcontractor Name</b>	<b>Minority Or Small Business Designation</b>	<b>Trade</b>	<b>Address</b>	<b>Contract Sum</b>

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. 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. Final progress photographs.
    - l. List of incomplete Work, recognized as exceptions to Architect's Certificate of Substantial Completion.
- H. 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 - PRODUCTS (Not Applicable)**

**PART 3 - EXECUTION (Not Applicable)**

**END OF SECTION 01 29 76**

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## 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 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 01 Section 01 29 76 "Progress Payment Procedures" for Schedule of Values items
  - 2. Division 01 Section 01 31 19 "Project Meetings" for progress meetings, coordination meetings, and pre-installation conferences.
  - 3. Division 01 Section 01 32 16 "Construction Progress Schedules" for requirements for construction scheduling and reporting progress of work.
  - 4. Division 01 Section 01 50 00 "Temporary Facilities and Controls".
  - 5. Division 01 Section 01 60 00 "Product Requirements" for coordinating general installation.
  - 7. Division 01 Section 01 77 00 "Closeout Procedures" for coordinating contract closeout.

### 1.3 CONSTRUCTION ADMINISTRATOR

#### A. Construction Administrator:

- 1. The Construction Administrator is identified in Division 01 Section 01 11 00 "Summary of Work".
- 2. **Construction Mobilization:**
  - a. Cooperate with the Construction Administrator in the allocation of mobilization areas of the site, for field offices and sheds, for agency facility access, traffic, and parking facilities.
  - b. During Construction, coordinate use of site and facilities through the Construction Administrator.
  - c. Comply with Construction Administrator's procedures for intra-project communications; submittals, reports and records, schedules, coordination drawings, and recommendations; and resolution of ambiguities and conflicts.
  - d. Comply with instructions of the Construction Administrator for use of temporary utilities and construction facilities.

### 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 Construction Administrator, 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. Installation 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 further stipulated in Part 3 "Execution", 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 a Site Logistics Plan(s) showing:** The entire project area and limits and items identified in Section 01 11 00 Summary of Work. It is intended that the Contractor shall present this refined plan for approval by the Architect/Engineer, Owner, and/or Construction Administrator. This staging and logistics plan will require refinement and change throughout 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.
  4. Prepare coordination drawings showing locations of surface recesses and voids, as well as offsets and breaks, requiring filling and/or feathering, both those initially visible and those discovered during the course of work. Review with Owner and Architect to obtain direction for filling and feathering. Revise drawing(s) to record directions for same for field and record purposes.
- 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:** The Contractor shall 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 Construction Administrator and authorities having jurisdictions. If unsatisfactory conditions exist notify the Construction Administrator 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 to the Architect coordination drawings in the form of (a) reproducible (vellum) transparencies at not less than 1/4-inch scale and (b) CAD files of the coordination drawings on CDROM. Such drawings will be required throughout all areas for trades as described below. These drawings shall show resolutions of trade conflicts in congested areas. The Architect will supply base drawings (with the title blocks removed), including floor plans, reflected ceiling plans, and structural framing plans, in the form of electronic CAD files on CDROM, using the AutoCAD release edition specified with the files, to the Contractor for distribution to the trades for use in developing the coordination drawings. Each trade contractor shall create separate layers within the CAD files to show the work of their trade. Prepare coordination drawings as follows:
1. The HVAC subcontractor shall initiate 1/4-inch scale drawings done on AutoCAD (latest version) showing ducts and piping in plan and section. Sheet metal shop drawings must be approved prior to starting coordination drawings.
  2. The Sprinkler subcontractor shall then add layers to superimpose his piping layout on the coordination drawings.
  3. The Electrical subcontractor shall then add layers to superimpose all the electrical information on the coordination drawings. Said information is to include but not necessarily be limited to cable trays, equipment, lighting, conduits, bus duct, etc. Show space allowances reserved for work under other contracts, such as audio-visual wiring and equipment.
  4. The Plumbing subcontractor shall then add layers to complete the coordination drawing by drawing his piping (including pitch) on the coordination drawings.
  5. Subcontractors for specialties, furnishings, equipment and special construction shall add layers to show their work to assure full coordination of all systems.
  6. The Construction Administrator shall review the completed coordination drawings for general compliance and then submit them to the Architect for his review. All subcontractors shall rework the drawings until all systems are properly coordinated.
  7. The Ceiling subcontractor shall utilize the drawings to prepare acoustic panel ceiling drawings and any other suspended ceiling drawings, and shall indicate areas of conflict with the work of other trades by drafting the location of grids, panels, and tiles.
  8. The Contractor shall indicate Architectural/Structural conflicts or obstacles and coordinate to suit the overall construction schedule. The Contractor shall locate all precut and prefabricated holes and openings in structural steel on the CAD coordination drawing files as required for HVAC, plumbing, fire protection and electrical work. The Contractor shall coordinate these holes and openings with the structural steel fabricator during the structural steel shop drawing development phase. Coordination to take place on schedule so as to permit shop fabrication of all structural steel holes and openings. The Owner will not be held responsible for the costs associated with field fabrication of structural openings resulting from the lack of timely and thorough coordination.
  9. The Contractor shall expedite all drawing work and coordinate to suit the construction schedule. The Contractor shall then review these drawings and compare them with the Architectural, Structural, Equipment, and other drawings and determine that all of the work can be installed without undue interference. Prior to the submittal to the Architect, areas of potential conflict shall be brought to the attention of the Contractor who shall convene a coordination meeting of all parties involved, for the purpose of resolving all utility conflicts. The Contractor shall supervise and direct corrective measures and have all trades sign acceptance of the drawings. Submit four (4) hard copies of each drawing to the Architect and two (2) copies to the Construction Administrator for the record, and only after all conflicts have been accommodated.
  10. If the coordination meeting fails to resolve coordination conflicts, the Contractor shall indicate the nature of such conflicts in a detailed RFI, proposing the most economical solution.
  11. The Contractor shall not permit work by trades to proceed in a given bay or area until all trade foremen agree on the exact arrangements for each room or area. If a given trade proceeds prior to trades approval, then if necessary, that trade shall revise their work, if necessary, at no extra cost, in order to permit other trades to proceed.
  12. Submit all coordination drawings on CD-ROM, in addition to hard copy.
- 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.

- B.** Clean and protect the existing buildings and interior finishes. Apply coverings to assure protection from damage or deterioration. The Agency intends to vacate the top floor of Building 460 during the roof replacement project. Occupants, computers, and desktop files will be relocated. Furniture including desks, tables, shelves, cabinets, chairs, etc. will remain. Protection is required for all immovable furniture and interior finishes. Building 470 will remain occupied.
- C.** Clean and provide maintenance on completed construction through the remainder of the construction period. Adjust and lubricate operable components to assure operability without damaging effects.
- D.** 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 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**
- 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 "Construction Progress Schedules" for requirements for construction 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 and updating of record documents.**
  10. **Use of the premises.**

11. **Parking availability.**
12. **Office, work, and storage areas.**
13. **Equipment deliveries and priorities.**
14. **Safety records and 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, bi-weekly, 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 updating of the Contractor's construction schedules and reporting progress of the Work.
  - 1. Refer to the General Conditions and the Agreement for definitions and specific dates of Contract Time.
- B. This Section includes the following:
  - 1. Format.
  - 2. Content.
  - 3. Revisions to schedules.
  - 4. Submittals.
  - 5. Distribution.
- C. **Related Sections:** The following Sections contain requirements that relate to this Section:
  - 1. Division 01 Section 01 29 76 "Progress Payment Procedures" specifies requirements for submitting Schedule of Values and Application for Payments.
  - 2. Division 01 Section 01 31 19 "Project Meetings" specifies requirements for submitting and distributing meeting and conference minutes.
  - 3. Division 01 Section 01 33 00 "Submittal Procedures" specifies requirements for submitting the Submittal Schedule.
  - 4. Division 01 Section 01 45 00 "Quality Control" specifies requirements for submitting inspection and test reports.
  - 5. Division 01 Section 01 60 00 "Product Requirements" specifies requirements for submitting the list of products.

### 1.3 DEFINITIONS

- A. **Construction Schedule:** A method of planning and scheduling a construction project utilizing a horizontal bar chart with a separate bar for each major portion of the Work or operation to make the schedule an effective tool for planning and monitoring the progress of the work.

### 1.4 QUALITY ASSURANCE

- A. **The Contractor's Consultant:** Retain a consultant to provide planning, evaluating, and reporting by CPM scheduling.
  - 1. **In-House Option:** The Owner may waive the requirement to retain a consultant if the Contractor can demonstrate that:
    - a. The Contractor has the computer equipment required to produce construction schedules.
    - b. The Contractor employs skilled personnel with experience in construction scheduling and reporting techniques.
  - 2. **Program:** Use **Microsoft Project** latest version.
  - 3. **Standards:** Comply with procedures contained in AGC's "Construction Planning & Scheduling."

### 1.5 PRELIMINARY SCHEDULE

- A. Preliminary Gantt schedule is to be prepared by the Contractor and submitted to the Construction Administrator within **seven (7)** days of award of contract. This schedule is to cover all items of Work from the start of the project up to the completion of the project. This schedule must be revised when the actual schedule of significant items varies more than one week from the proposed schedule.

**1.6 CONSTRUCTION SCHEDULE FORMAT**

- A. **Format:** Utilize a horizontal bar chart (Gantt) with a separate bar for each major portion of the Work or operation, identifying first work day of each week.
- B. **Program:** Use **Microsoft Project**, latest version.
- C. **Sequence of Listings:** Utilize the Table of Contents of this Project Manual and the chronological order of the start of each item of work.
- D. **Scale and Spacing:** Provide space for notations and revisions.
- E. **Sheet Size:** To be coordinated with Construction Administrator.
- F. **Weather Days Allowance:** The Contractor shall include as a separate identifiable activity on the Critical Path of the Construction Schedule, 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 Construction Schedule. This determination shall be based on the normal anticipated weather for the project location and the nature of the project work. The Construction Schedule shall be based on the contractor's determined weather delay allowance. The weather delay activity shall be included in the construction schedule 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):

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

- 3. The Contractor shall insert an activity in the Critical Path of the Construction Schedule 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.

**1.7 CONTENT**

- A. Show complete sequence of construction by activity, with dates beginning and completion of each element of construction.
- B. Identify each item by specification section numbers.
- C. Identify work of separate phases and other logically grouped activities.
- D. Show accumulated percentages of completion of each item, and total percentage of Work completed, as of the first day of each month.
- E. Provide separate schedule of submittal dates for shop drawings, product data, and samples, Owner/Agency furnished products and any products identified as under Allowances, and dates reviewed submittals will be required from Architect/Engineer. Indicate decision dates for selection of finishes.
- F. Indicate delivery dates for Owner/Agency furnished products and any products identified as under Allowances.
- G. Indicate critical path with original baseline indicated.
- H. Coordinate content with Schedule of Values specified in Section 01 29 76 "Progress Payment Procedures."

**1.8 SUBMITTALS AND REVISIONS TO SCHEDULES**

- A. An initial bar graph schedule is to be prepared by the Contractor and submitted to the Construction Administrator. Refer to Article 1.5.
- B. Indicate progress of each activity to date of submittal, and projected completion date of each activity.
- C. Identify activities modified since previous submittal, major changes in scope, and other identifiable changes.
- D. Provide narrative report to define problem areas, anticipated delays, and impact on Schedule. Report corrective action taken, or proposed, and its effect.

- E. Schedules must be revised monthly and when the actual schedule of significant items varies more than **seven (7) days** from the proposed schedule.
- F. Submit revised Construction Schedules for each Application for Payment.
- G. Submit **four (4)** copies of the Construction Schedule to the Construction Administrator.

**1.9 DISTRIBUTION**

- A. Distribute copies of the Construction 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**

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## 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 construction photographs.
- B. **Related Sections:** The following Section contains requirements that relate to construction photographs:
  - 1. Division 01 Section 01 33 00 "Submittal Procedures" specifies general requirements for submitting digital construction photographs.

### 1.3 SUBMITTALS

- A. **Photographs:** Provide a digital camera to take **twenty-four (24)** or more photos each time. Upload photos to the Project PMWeb site.
- B. **Extra Sets:** When requested by the Owner, the photographer shall prepare prints or CD-ROMs of the photographs.

### 1.4 QUALITY ASSURANCE

- A. Engage a qualified commercial photographer to take photographs during construction.
- B. **Photographer's Qualifications:** Photographer shall be an individual of established reputation who has been regularly engaged as a professional photographer for not less than **three (3) years**.

## PART 2 - PRODUCTS

### 2.1 PHOTOGRAPHIC COPIES

- A. On the date the work is begun and every **thirty (30) days** thereafter (until the work is at least 95 percent complete), the Contractor shall have digital photographs of the construction taken by a professional photographer.
- B. **Identification:** Label each photo with project name and date the photographs were taken. With each CD-ROM submittal provide an applied label, rubber-stamped or index sheet with the following information:
  - 1. **Name of the Project.**
  - 2. **Name and address of the photographer.**
  - 3. **Name of the Architect.**
  - 4. **Name of the Contractor.**
  - 5. **Date the photographs were taken.**
  - 6. **Vantage Point: Description of vantage point, in terms of location, direction (by compass point), and elevation or story of construction.**

## PART 3 – EXECUTION

### 3.1 PRECONSTRUCTION PHOTOGRAPHS

- A. Before starting construction, take digital photos of the site and surrounding properties from different points of view, as selected by the Construction Administrator.
  - 1. Take digital photos in sufficient number to show existing site conditions before starting Work.
  - 2. Take digital photos of adjacent existing buildings either on or adjoining the property in sufficient detail to record accurately the physical conditions at the start of construction.

**3.2 PHOTOGRAPHIC REQUIREMENTS**

- A.** Take **twenty-four (24)** or more digital photographs monthly, coinciding with the cutoff date associated with each Application for Payment. The Construction Administrator shall select the vantage points for each shot to best show the status of construction and progress since the last photos were taken.
- B.** As the digital photographs are a record of the work progress, they shall be taken each month, whether or not they show work done during the preceding month. Deliver the CD-ROMs and prints within **ten (10) days** of their taking.
- C.** Provide and coordinate the use of photographic software to assure that the photos are viewable by all interested parties.

**END OF SECTION 01 32 33**

## 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 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. **Quality assurance submittals.**
  - 6. **Proposed "Substitutions/Equals".**
  - 7. **Warrantee samples.**
  - 8. **Coordination Drawings.**
  - 9. **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.**
  - 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 Sections:** The following Sections contain requirements that relate to this Section:
  - 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 Procedures" 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 "Construction Progress Schedules" for requirements for construction scheduling and reporting progress of work.
  - 6. Division 01 Section 01 32 33 "Photographic Documentation" specifies requirements for submittal of periodic construction photographs.
  - 7. Division 01 Section 01 35 26 "Government Safety Requirements" specifies the requirements for safety plans, reports, and investigation submittals.
  - 8. Division 01 Section 01 45 00 "Quality Control" specifies requirements for submittal of inspection and test reports and mockups.

9. Division 01 Section 01 77 00 "Closeout Procedures" specifies requirements for submittal of Project Record Documents and warranties at project closeout.
10. Division 01 Section 01 78 30 "Warranties and Bonds".

### 1.3 DEFINITIONS

- A. 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 50.
  1. Preparation of Coordination Drawings is specified in Division 01 Section 01 31 00 "Project Management and Coordination" and may include components previously shown in detail on Shop Drawings or Product Data.
- B. Field samples are full-size physical examples erected on-site to illustrate finishes, coatings, or finish materials. Field samples are used to establish the standard by which the Work will be judged.
- C. Mockups are full-size assemblies for review of construction, coordination, testing, or operation; they are not Samples.

### 1.4 SUBMITTAL PROCEDURES

- A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.
  1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
  2. Coordinate transmittal of different types of submittals for related elements of the Work so processing will not be delayed by the need to review submittals concurrently for coordination.
    - a. The Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until all related submittals are received.
    - b. The Architect reserves the right to reject incomplete submitted packages.
  3. Processing: To avoid the need to delay installation as a result of the time required to process submittals, allow sufficient time for submittal review, including time for re-submittals.
    - a. Allow **fourteen (14) days** for initial review. Allow additional time if the Architect must delay processing to permit coordination with subsequent submittals.
    - b. If an intermediate submittal is necessary, process the same as the initial submittal.
    - c. Allow **fourteen (14) days** for reprocessing each submittal.
    - d. No extension of Contract Time will be authorized because of failure to transmit submittals to the Architect sufficiently in advance of the Work to permit processing.
- B. **Submittal Preparation:** Place a permanent label, title block or **8-1/2" x 11"** cover page approved by the Architect, on each submittal for identification. Indicate the name of the entity that prepared each submittal on the label or title block.
  1. The minimum number of copies required for each submittal shall be **seven (7)** or as determined otherwise at the pre-construction conference or by the Construction Administrator.
  2. Provide a space approximately **4" x 5"** on the label, beside the title block or on the cover page on Shop Drawings to record the Contractor's review and approval markings and the action taken.
  3. Include the following information on the label for processing and recording action taken.
    - a. **Project Name and State of Connecticut Project Number.**
    - b. **Date.**
    - c. **Name and address of the Architect, Construction Administrator, and Owner Representative.**
    - d. **Name and address of the Contractor.**
    - e. **Name and address of the subcontractor.**
    - f. **Name and address of the supplier.**
    - g. **Name of the manufacturer.**
    - h. **Number and title of appropriate Specification Section.**



- i. **Drawing number and detail references, as appropriate.**
  - j. **Indicate either initial or resubmittal.**
  - k. **Indicate deviations from Contract Documents.**
  - l. **Indicate if "equal" or "substitution".**
- C. Submittal Transmittal:** Package each submittal appropriately for transmittal and handling. Transmit each submittal from the Contractor to the Architect using a transmittal form. Copy the Construction Administrator on the transmittal. The Architect will return all submittals to the Contractor after action is taken with a complete copy of the submittal package and one complete copy of the submittal package. The Architect will not accept submittals received from sources other than the Contractor.
- 1. On the transmittal, record relevant information and requests for data. On the form, or separate sheet, record deviations from Contract Document requirements, including variations and limitations. Include Contractor's certification that information complies with Contract Document requirements.

## 1.5 SUBMITTAL SCHEDULE

- A.** In conjunction with the Contractor's Construction or CPM schedule, prepare a complete schedule of submittals. Submit the schedule to the Construction Administrator within **fifteen (15)** 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 Construction or 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 modifications to submittals noted by the Architect 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 or CPM Schedule.
  - 2. **Initial Submittal:** Submit concurrently with start-up 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. 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.
    - a. **Architect and Construction Manager reserve** the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

- D. Processing Time:** Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on **Architect's** receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
- 1. Initial Review:** Allow **fifteen (15)** days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. **Architect** will advise Contractor when a submittal being processed must be delayed for coordination with related submittals not yet received. Additional time will be required if processing must be delayed to permit 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)** days for review of each resubmittal.
  - 4. Mass Submittals:** **Six (6)** or more submittals in **one (1) day** or **twenty (20)** or more submittals in **one (1) week**. 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.
- E. 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.
- 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.
- F. 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.

#### 1.6 DAILY CONSTRUCTION REPORTS

- A.** Prepare a daily construction report recording the following information concerning events at the site. Upload to PMWeb, notify the CA and submit duplicate copies to the CA 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.**

#### 1.7 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.
- B.** Shop Drawings include fabrication and installation Drawings, setting diagrams, schedules, patterns, templates and similar Drawings. Include the following information:
- Dimensions.

2. Identification of products and materials included by sheet and detail number.
  3. Compliance with specified standards.
  4. Notation of coordination requirements.
  5. Notation of dimensions established by field measurement.
  6. Sheet Size: Except for templates, patterns, and similar full-size Drawings, submit Shop Drawings on sheets at least **8-1/2" x 11"** but no larger than **36" x 48"**.
  7. Submit **one (1)** reproducible media and **seven (7)** prints as directed by the Construction Administrator. The Contractor's submittal shall identify the specification section and/or drawing number applicable to the submittal.
  8. Details shall be large scale and/or full size.
- C.** The Contractor shall review the Shop Drawings, stamp with this 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.
- 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 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 the required number of corrected copies of Shop Drawings until fully reviewed.
- F.** Upon final review submit **four (4)** additional prints, same as submitted, 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 CA within **seven (7)** 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".

#### 1.8 SHOP DRAWINGS FOR ROOFING SYSTEMS:

- A. Construction Phase Requirements:** During product submittals and shop drawing review for Roofing Systems the Consultant shall verify FM Global requirements are satisfied for all relevant components. The DAS PM and Construction Administer for the Project shall submit the Contractor's roofing systems product information and shop drawings to the Consultant and FM Global. Shop drawings for roofing systems shall comply with all of the requirements in the section above "Shop Drawings". **Two (2)** sets of information [as noted in this Section 01 33 00 "Submittal Procedures"] shall be submitted to the State's Insurance Carrier (SIC):
1. **State Insurance Carrier (SIC):**  
FM Global Boston Operations  
Plan Review  
1175 Boston-Providence Turnpike  
PO Box 9102  
Norwood, MA 02062  
Tel: (781) 440-8241 or FAX (781) 440-8742  
[bostonleadengineer@fmglobal.com](mailto:bostonleadengineer@fmglobal.com)
- B.** The State Insurance Carrier requires **two (2)** weeks prior notice of roofing system shop drawing reviews.
- C.** See Section **00 30 60 General Statement For FM Global Checklist For Roofing Systems** and **Section 50 60 00 FM Global Checklist for Roofing Systems**.

**1.9 PRODUCT DATA**

- A. 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 each copy to show applicable choices and options. Where printed 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 a preliminary single copy of Product Data where selection of options is required.
  4. **Submittals:** Submit **seven (7)** copies of each required submittal; submit **five (5)** copies where required for maintenance manuals. The Architect will retain **one (1)** and will return the other marked with action taken and corrections or modifications required.
    - 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 copy of Product Data is in the Installer's possession.
    - b. Do not permit use of unmarked copies of Product Data in connection with construction.

**1.10 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. Store, mount or display Samples on site in the manner to facilitate review of qualities indicated. Prepare Samples to match the Architect's sample. Include the following:
    - a. **Specification Section number and reference.**
    - b. **Generic description of the Sample.**
    - c. **Sample source.**
    - d. **Product name or name of the manufacturer.**
    - e. **Compliance with recognized standards.**
    - f. **Availability and delivery time.**
  2. 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.
- 3. **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.
- 4. **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.
- 5. 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.

#### 1.11 QUALITY ASSURANCE SUBMITTALS

- A. 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.
- B. **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.
- C. **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." Coordinate with Divisions 02 – 26 for Special Inspections required by the latest edition of the "Connecticut State Building Code". **Special Inspections are anticipated for shallow foundations, controlled structural fill, cast in place concrete, welding, bolting, and fabrication.**

#### 1.12 ARCHITECT'S ACTION

- A. Except for submittals for the record or information, where action and return are 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. **Final Unrestricted Release:** When the Architect marks a submittal "Approved for fabrication," the Work covered by the submittal may proceed provided it complies with requirements of the Contract Documents. Final payment depends on that compliance.
  - 2. **Final-But-Restricted Release:** When the Architect marks a submittal "Incorporate Notations," 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. **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.
    - a. 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.
  4. **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**

## 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 01 Section 01 31 00 "Project Management and Coordination" for procedures for coordinating cutting and patching with other construction activities.
  - 3. Division 01 Section 01 73 29 "Cutting and Patching" for procedures for cutting and patching.
  - 4. Division 01 Section 01 74 19 "Construction Waste Management & Disposal" for the requirements for waste management goals, waste management plan and waste management plan implementation.
  - 5. Division 02 Section 02 41 00 "Selective Demolition" for demolition of selected portions of the building for alterations.
  - 6. Division 50 00 00 "Project-Specific Available Information" for information that is referenced in Section 00 30 00 "Hazardous Building Materials Inspection and Inventory."
  - 7. Refer to other Sections for specific requirements and limitations applicable to performing alteration Work with individual parts of the Work.
  - 8. Requirements of this Section apply to mechanical and electrical installations. Refer to Division 22, 23 and 26 Sections for other requirements and limitations applicable to renovation Work by mechanical and electrical installations.
- C. Definitions:
  - 1. Clean Fill: Either (1) natural soil or (2) rock, brick, ceramics, concrete, and asphalt paving fragments which are virtually inert and pose neither a pollution threat to ground or surface waters nor a fire hazard.
  - 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, referring to existing Work as a standard.

## 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, which are limited by the physical constraints imposed by occupancy of the facility. Consider all aspects of the substrates within the identified plan area. Material information and quantities were obtained from site surveys. Accordingly, variations (plus or minus 10 percent) in quantities within the limits of the work area are considered as having no impact on contract sum and contract performance period. Where additional abatement work is required beyond the above variations, the contract sum and contract performance period shall be adjusted under provisions of Division 01 of the Specifications.
- 3. Verify that demolition is complete and areas are ready for installation of new Work.
- 4. Beginning of restoration Work means acceptance of existing conditions.

#### B. Project Procedures for Work Involving Lead-Based Paint (LBP):

- 1. The **Contractor** is responsible for abating all **Lead-Based Paint (LBP)** prior to the start of any Work involving renovation, demolition, reconstruction, alteration, remodeling, or repair (if necessary), unless noted differently below or specified differently elsewhere.
- 2. The **Contractor** shall conduct all demolition and removal Work, specified in the Technical Specifications Sections of this Project Manual, in conformance with the regulations as specified in this **Section 01 35 16 Alteration Project Procedures** and as specified in **Section 02 83 00 Lead Paint Activity**.
- 3. If testing for LBP has been conducted at the facility scheduled for renovation, demolition, reconstruction, alteration, remodeling, or repair, then the results of the LBP testing are summarized in **Division 50 00 00 Project-Specific Available Information, Section 50 30 00 Hazardous Building Materials Inspection and Inventory** at the end of the Technical Specification Sections. Under no circumstance shall this information be the sole means used by the Contractor for determining the extent of LBP. The Contractor shall be responsible for verification of all field conditions affecting performance of the Work.
- 4. If the Contractor should encounter any material suspected or known to contain **LBP that was not previously identified and assigned as the Contractor's responsibility**, then the Contractor should immediately notify the Construction Administrator **in writing** of same. It is the State's responsibility to have the material tested (if necessary). The Owner will respond within **four (4) Calendar Days** after receiving the Contractor's written request to the Construction Administrator for testing the suspect material. **If necessary, the Contractor will abate LBP within a reasonable time period after the Owner's issuance of a Change Order for the additional abatement work.**
  - a. When the **Owner** requests the **Contractor** undertake the responsibilities **for the abatement and disposal of the LBP**, then the compensation to the Contractor by Owner for the Work shall be determined by the **"Unit Prices"** stated in **Section 01 20 00 Contract Considerations**.
- 5. Exposure levels for lead in the construction industry are regulated by 29 CFR 1926.62. Construction activities disturbing surfaces containing lead-based paint (LBP) which are likely to be employed, such as



sanding, grinding, welding, cutting and burning, have been known to expose workers to levels of lead in excess of the Permissible Exposure Limit (PEL). Conduct demolition and removal Work specified in the technical sections of this specification in conformance with these regulations. In addition, construction debris/waste may be classified as hazardous waste. Disposal of hazardous waste material shall be in accordance with 40 CFR Parts 260 through 271 and Connecticut Hazardous Waste Management Regulations Section 22a-209-1; 22a-209-8(c); 22a-449(c)-11; and 22a-449(c)-100 through 110.

6. The Contractor's Work shall be based on a child under the age of six (6) years in residence; the Work shall also be in accordance with Connecticut Regulations Section 19a-111-1 through 11.
7. If this facility was constructed **prior to 1978** it is likely to have painted surfaces containing lead-based paint.
8. In accordance with the United States Environmental Protection Agency's (EPA) Lead-Based Paint Renovation, Repair, and Painting Program (RRP) issued by the EPA on April 22, 2008, as amended, and regulated by 40 CFR 745, contractors performing renovation, repair and painting projects that disturb lead-based paint in homes, child care facilities, and schools built before 1978 must be certified and must follow specific work practices to prevent lead contamination. EPA requires that firms performing renovation, repair, and painting projects that disturb lead-based paint in pre-1978 homes, child care facilities and schools be certified by EPA and that they use certified renovators who are trained by EPA-approved training providers to follow lead-safe work practices. The Contractor must be a Renovation Firm that has completed an EPA Lead-Safe Certification Program and be certified to conduct lead-based paint activities and renovations under the RRP rule. The Contractor shall have at least one "Certified Renovator" assigned to jobs where LBP is disturbed.

**C. Project Procedures for Work Involving Asbestos Containing Material (ACM):**

1. The **Contractor** is responsible for abating all **Asbestos Containing Material (ACM)** that is visible and accessible.
2. In **demolition projects**, every attempt should be made by the **Contractor** to **remove all ACM**.
3. If testing for asbestos has been conducted at the facility scheduled for renovation, demolition, reconstruction, alteration, remodeling, or repair, then the results of the asbestos testing are summarized in **Division 50 00 00 Project-Specific Available Information, Section 50 30 00 Hazardous Building Materials Inspection and Inventory** at the end of the Technical Specification Sections. Under no circumstance shall this information be the sole means used by the Contractor for determining the extent of asbestos. The Contractor shall be responsible for verification of all field conditions affecting performance of the Work.
4. If the Contractor should encounter any material suspected or known to contain asbestos **not previously identified and assigned as the Contractor's responsibility**, then the Contractor should immediately notify the Construction Administrator **in writing** of same. It is the Owner's responsibility to have the material tested and abated (if necessary). The Owner will respond within **24 hours** after receiving the Contractor's written request to the Construction Administrator for testing the suspect material. **If necessary, the Contractor will abate ACM within a reasonable time period after the Owner's issuance of a Change Order for the additional abatement work.**
  - a. When the **Owner** requests the **Contractor** undertake the responsibilities for the **abatement and disposal of the ACM**, then the compensation to the Contractor by Owner for the Work shall be determined by the "**Unit Prices**" stated in **Section 01 20 00 Contract Considerations**.
5. No attempt has been made to locate hazardous material associated with existing site utilities, though it is presumed that at least some asbestos may be discovered associated with underground piping during the course of site and site utilities work. If and when such materials appear, the Contractor shall notify the Owner, who shall direct additional work outside of this Agreement to assist in cutting up and disposing of same. The Contractor shall assist the hazardous materials contractor(s) with excavating, heavy lifting, and the like at no additional cost to the Owner.

**E. Project Procedures for Work Involving Polychlorinated Biphenyls (PCBs) in Building Materials:**

1. If this facility was constructed **between 1950 and 1978**, it is likely to have caulk and/or glazing containing PCBs.
2. The **Contractor** is responsible for abating all **Polychlorinated Biphenyls (PCBs) in Building Materials** prior to the start of any Work involving construction, renovation or demolition (if necessary), unless noted differently below or specified differently elsewhere.
3. The **Contractor** shall conduct all demolition and removal Work, specified in the Technical Specifications Sections of this Project Manual, in conformance with the regulations as specified in **Section 01 35 16 Alteration Project Procedures** and as specified in **Section 02 84 33 Removal and Disposal of PCBs**.

4. If the Owner has tested the facility scheduled for renovation, demolition, reconstruction alteration, remodeling or repair for PCBs in Building Materials such as caulk and glazing or other types of material, then the results are located in **Division 50 00 00 Project-Specific Available Information, Section 50 30 00 Hazardous Building Materials Inspection and Inventory** at the end of the Technical Specification Sections; otherwise the Owner assumes such materials do not warrant testing. It is the Owner's responsibility to have the material tested, not the Contractor, subcontractors or anyone working on behalf of the Contractor.
5. In the case where the Owner has a survey of locations with results and if the Contractor should encounter new areas of the subject material already identified by the survey, then he should immediately notify the Construction Administrator **in writing** of same. It is the State's responsibility to have the material tested and abated (if necessary). The Owner will respond within **four (4) Calendar Days** after receiving the Contractor's written request to the Construction Administrator for testing the suspect material. **If necessary, the Contractor will abate PCBs in Building Materials within a reasonable time period after the Owner's issuance of a Change Order for the additional abatement work.**
  - a. When the **Owner** requests the **Contractor** undertake the responsibilities **for the abatement and disposal of the PCBs in Building Materials**, then the compensation to the Contractor by Owner for the Work shall be determined by the "**Unit Prices**" stated in **Section 01 20 00 Contract Considerations**.
6. The work shall be performed by persons who are knowledgeable, qualified, and trained in the removal, treatment, handling, and disposal of PCB contaminated wastes and the subsequent cleaning of the affected environment. These Specifications govern all work activities that disturb PCB-containing caulk and glazing and associated building material. All activities shall be performed in accordance with, but not limited to, OSHA Regulation 29 CFR 1926, the United States Environmental Protection Agency's PCB Regulation 40 CFR Part 761, Connecticut General Statutes 22a-463 through -469 inclusive, and the **PCB Site Remedial Plan** where applicable.

### 3.2 PREPARATION

- A. Cut, move, or remove items as are necessary for access to alteration and renovation Work. Replace and restore at completion.
- B. Remove unsuitable material not marked for salvage, such as rotted wood, corroded metals, and deteriorated masonry and concrete. Replace materials as specified for finished Work.
- C. Remove debris and abandoned items from area and from concealed spaces.
- D. Prepare surface and remove surface finishes to provide for proper installation of new Work and finishes.
- E. Close openings in exterior surfaces to protect existing Work from weather and extremes of temperature and humidity. Insulate ductwork and piping to prevent condensation in exposed areas.

### 3.3 INSTALLATION

- A. Coordinate alteration and renovation Work to expedite completion, and if required sequence Work to accommodate Owner occupancy.
- B. Remove, cut and patch Work in a manner to minimize damage and to provide restoring products and finishes to original and or specified condition in accordance with **Section 01 73 29 "Cutting and Patching"**.
- C. Refinish visible existing surfaces to remain in renovated rooms and spaces, to specified condition for each material, with neat transition to adjacent finishes in accordance with **Section 01 73 29 "Cutting and Patching"**.
- D. Recover and refinish Work that exposes mechanical and electrical Work exposed accidentally during the Work.
- E. Install products as specified in individual specification sections.

### 3.4 TRANSITIONS

- A. 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.
- B. 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/Engineer.

**3.5 ADJUSTMENTS**

- A. Where removal of partitions or walls result in adjacent spaces becoming one, rework floors, walls, and ceilings to a smooth plane without breaks, steps, or bulkheads.
- B. Where a change of plane of 1/4" in 12" or more occurs, request recommendation from Architect/Engineer for providing a smooth transition.
- C. Trim existing doors as necessary to clear new floor finish. Refinish trim as required.
- D. Fit Work at penetrations of surfaces as specified in **Section 01 73 29 "Cutting and Patching"**.

**3.6 REPAIR OF DAMAGED SURFACES**

- A. Patch or replace portions of existing surfaces that are damaged, lifted, discolored, or showing imperfections.
- 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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**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.

**1.3 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.

<b>AMERICAN SOCIETY OF SAFETY ENGINEERS (ASSE/SAFE)</b> <a href="http://www.asse.org/publications/">www.asse.org/publications/</a>	
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
<b>AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)</b> <a href="http://www.asme.org/Codes/">www.asme.org/Codes/</a>	
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
<b>NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)</b> <a href="http://www.nfpa.org/">www.nfpa.org/</a>	
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
<b>CODE OF FEDERAL REGULATIONS (CFR)</b> <a href="http://www.archives.gov/federal-register/cfr/">www.archives.gov/federal-register/cfr/</a>	
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
<b>US Army Core of Engineers (USACE)</b> <a href="http://www.iwr.usace.army.mil">www.iwr.usace.army.mil</a>	
EM 385-1-1	Safety, and Health Requirements Manual (2008),

**1.4 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. **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

**1.5 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.)]

## 1.6 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.

## 1.7 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:

**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.

### C. 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](http://www.ct.gov/DAS)) > Licensing, Certification, Permitting and Codes > Cranes, or call **(860) 713-5580** or **(860) 713-5529**.

**D. 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 **quality control** 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](http://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 SSSH, and a project work stoppage. The project work stoppage will remain in effect pending approval of a suitable replacement.

**E. 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.

**1.8 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](http://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 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 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 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 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 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](http://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](http://www.usace.army.mil/Library).
- 1.9 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.

**1.10 DISPLAY OF SAFETY INFORMATION**

Within **1 Calendar Day** 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.

**1.11 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.

**1.12 EMERGENCY MEDICAL TREATMENT**

Contractors will arrange for their own emergency medical treatment. The Owner has no responsibility to provide emergency medical treatment.

**1.13 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 **5 Calendar Days** of the accident.

**B. Accident Notification**

Notify the CA as soon as practical, but not later than **4 hours** 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 and the requirements of **Factory Mutual Global “Guide to Hot Work Loss Prevention”** and the **Red Tag Permit System**.

**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, SHALL BE REPORTED TO THE LOCAL FIRE DEPARTMENT, GENERAL CONTRACTOR’S AUTHORIZED REPRESENTATIVE, AND OWNER’S CA IMMEDIATELY.

**1.14 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.

**1.15 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.

**3.2 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-isocyanates, 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.

### 3.3 UNFORESEEN HAZARDOUS MATERIAL

- A. Related Section: Division 01, Section 01 35 16, Alteration Project Procedures.

### 3.4 PRE-OUTAGE COORDINATION MEETING

Contractors are required to apply for utility outages at least **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.

### 3.5 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.

### 3.6 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'. 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**. Existing 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).

**3.7 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**.

**3.8 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.

**3.9 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 2' 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' if parallel within 5' 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.

**3.10 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.

**3.11 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**.



**3.12 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**

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## 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 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 Contractor, or another entity engaged by the Contractor, 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.
- J. **"Project Site"** is the space available to the Contractor for performing construction activities, either exclusively or in conjunction, with others performing other Work as part of the Project. The extent of the Project Site is shown on the Drawings and may or may not be identical with the description of the land on which the Project is to be built.
- 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" 50-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 Contractor 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 Contractor 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 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 - 2016.
    - a. CT Amendments – Errata #1 12/31/16.
    - b. International Building Code - 2012.
    - c. International Existing Building Code - 2012.
    - d. International Mechanical Code - 2012.
    - e. International Plumbing Code - 2012.
    - f. International Energy Conservation Code - 2012.
    - g. National Electric Code (NFPA 70) - 2014.
    - h. ICC/ANSI A117.1-Accessible and Usable Buildings and Facilities - 2003.
  2. Connecticut Fire Safety Code - 2016.
    - a. International Fire Safety Code – 2012.
    - b. NFPA 101 - 2012.

3. Connecticut Fire Prevention Code - 2015.
  - a. NFPA 1 - 2012.
4. Occupational Safety and Health Administration (OSHA)
  - a. OSHA 29 CFR Part 1910 Occupational Safety and Health Regulations - 2018.
  - b. OSHA 29 CFR Part 1926 Occupational Safety and Health Regulations for Construction - 2018.
- B. The “**latest applicable State Codes**” are available for download from the DAS website ([www.ct.gov/das](http://www.ct.gov/das)) > Doing Business With The State > State Building Construction > Publications and Forms > Office of State Building Inspector *and* Office of State Fire Marshal. Also visit the [www.ctdol.state.ct.us](http://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**

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## 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 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.

### 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 **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 Sum.
  - 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". **Special Inspections are anticipated for shallow foundations, controlled structural fill, cast in place concrete, welding, bolting, and fabrication.**
    - 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 non-compliance 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 General Conditions Article 16 "Inspections & Tests".

#### 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

##### 3.1 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 or **Construction Administrator**.
  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's** 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.

**3.2 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**

## 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 sanitary facilities, including drinking water.**
- C. Support facilities include, but are not limited to, the following:
  - 1. **Temporary enclosures.**
  - 2. **Temporary project identification signs.**
  - 3. **Collection and disposal of waste and cleaning.**
- D. Security and protection facilities include, but are not limited to, the following:
  - 1. **Barricades, warning signs**
  - 2. **Enclosure fence.**
  - 3. **Security enclosure and lockup.**
  - 4. **Protection.**
  - 5. **Environmental protection.**
  - 6. **Traffic ways.**
  - 7. **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:**
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.
- F. **Enclosure Fencing:** Provide 0.120-inch thick, galvanized 2-inch chain link fabric fencing six (6) feet high galvanized steel pipe posts, 1-1/2 inches knuckle both bottom and top I.D. for line posts and 2-1/2 inches I.D. for corner posts.

### 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 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. **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.
- F. **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.
- G. **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. 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. Connect to existing facilities, through an approved backflow prevention device; extend branch piping with outlets so that water is available by use of hoses. Owner will pay for water used. The Contractor shall not waste water or use faulty equipment. The Contractor shall provide, at his own expense, all connections, extensions and other apparatus required for use of such services. Upon completion of the Contract, the Contractor shall disconnect temporary extensions and return utility to its original condition.

**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.

**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.

**E. 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.

**F. 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. Field Offices:** Provide insulated, weathertight temporary offices of sufficient size to accommodate 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. **State User Agency Provided Field Offices:** The State User Agency will furnish, without charge, **one (1)** room for the Contractor's use as an office in an existing building. The Owner and Construction Administrator will share space with the Contractor. The Contractor shall provide and install a 5-lb ABC fire extinguisher and an approved first aid kit. The Contractor shall be responsible for furniture and shall keep this area clean and return it to its original condition after use. The Contractor shall provide the following furniture and Equipment, which will remain his property. The furniture may be used but shall be in good condition as judged by the Owner and Construction Administrator.

a.	<b>One (1) Lockable, double-pedestal, office desks, each with an executive chair.</b>
b.	<b>One (1) Plan table.</b>
c.	<b>Six (6) Conference chairs and a conference table (approx. 5 feet x 12 feet).</b>
d.	<b>One (1) Wall mounted, white, wipe-off board, with markers (3 feet x 4 feet).</b>
e.	<b>Two (2) Large capacity waste receptacles.</b>
f.	<b>One (1) Plain paper, laser jet color printer/copier.</b>
g.	<b>One (1) Telephone with telephone lines and voice mail.</b>
h.	<b>One (1) Telephones lines (dedicated to computer use) with high-speed Internet connection (minimum of DSL or cable modem service).</b>
i.	<b>One (1) Wireless router within the work space. Access to be shared with the Owner and Construction Administrator.</b>

3. **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 **20 Mbps** unless otherwise approved by the Owner.
4. **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.
5. Storage sheds for tools, materials and equipment shall be weathertight with heat, lighting and ventilation for products requiring controlled conditions.
6. Remove temporary materials, equipment services and construction before Substantial Completion.
7. Clean and repair damage caused by installation or use of temporary facilities. Restore existing facilities used during construction to specified or original condition.

**C. Temporary Enclosures:** Provide temporary enclosures for protection of the existing facilities, in progress and completed, from exposure to foul weather, moisture, debris, and construction operations and activities.

1. Install tarpaulins securely, with incombustible wood framing and other materials. Close openings of 25-sq ft or less with plywood or similar materials.
2. Close openings through floor or roof decks and horizontal surfaces with load-bearing, wood-framed construction.
3. Where temporary enclosure exceeds 100-sq ft in area, use UL-labeled, fire-retardant-treated material for framing and main sheathing.
4. Provide temporary interior protection during roof replacement work. Define the proposed work area(s) ahead of time and ensure that approved protection is in place prior to the start of work.
5. Protection shall include polyethylene sheets, wood or light-gauge framing, rigid insulation board, and/or plywood sheathing.
6. Interior protection is required at all roof drain locations.
7. Coordinate with the Owner for temporary relocation of interior occupants.

8. At Building 460: Construction debris to be limited to and contained on or above the third (top) floor level. The Owner anticipates vacating the third floor of employees, their computers, and critical documents for the duration of the project.
    - a. Protect desks, remaining furniture, carpets, horizontal surfaces, vertical surfaces, partitions, and items not removed by DAS.
    - b. Restrict access to the third floor at elevators and stairs, including the central interior stair, using signage and barriers.
    - c. Provide temporary partition(s), enclosure, and signage at/above the central interior stair to protect the lower floor and stair levels from construction debris for the duration of the project.
    - d. Maintain access between first and second floors for the building occupants and egress.
    - e. Provide temporary protection and signage at the interior stair towers at the northeast and southwest corners of the building, elevator doors, and roof-to-wall perimeter (reflecting the ACM location plan), to control and contain debris.
    - f. Provide temporary protection and signage beneath the existing clerestory skylights, existing chimneys to be partially removed, existing roof penetrations, and existing drains to be replaced during the restoration work.
  9. At building 470: Construction debris protection is critical above food service areas.
    - a. Provide temporary protection and signage at existing skylight openings, existing roof penetrations, existing drains to be restored, and the existing expansion joint along the east side of Roof Area A to be replaced.
    - b. Work above the cafeteria serving and cooking areas shall be limited to weekends, or weekdays after 2:00 PM to avoid impact to food service, preparation, and cleanup. Temporary protection is still required.
- D. 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. **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.
    - b. **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](http://www.ct.gov/das)) > Doing Business With The State > State Building Construction > Publications and Forms > DAS Construction Services Library > 3000 Series - Design Phase Forms.
- E. 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.
- F. **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:** Maintain the existing fire-protection facilities throughout the project. Comply with NFPA 10 "Standard for Portable Fire Extinguishers" and NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations."
1. **Contact DAS Facility management fire alarm vendor and review temporary protection requirements for the existing system.**
  2. 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.
  3. Store combustible materials in containers in fire-safe locations.
  4. 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.
  5. Provide supervision of welding operations, combustion-type temporary heating units, and similar sources of fire ignition.
  6. 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.
  7. Do not use gasoline for cleaning or mating surfaces of roof membrane laps.
  8. Limit amount of gasoline on roof to two (2) gallons which shall be in UL listed containers. Also provide one 30 B:C fire extinguisher within 75 feet of any point on the roof.
- C. **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".
- D. **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.

- E. 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.
- F. Protection:**
1. Protect buildings, equipment, furnishings, grounds and plantings from damage. Any damage shall be repaired or otherwise made good at no expense to the Owner.
  2. 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.
  3. Provide temporary protection for installed products. Control traffic in immediate area to minimize damage.
  4. 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.
  5. 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.
  6. See also General Conditions Article 19, "Protection of the Work, Persons and Property".
- G. 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.
- H. Identification Badges for Contractor's Personnel, Visitors & 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**

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## 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.
    - 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**

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## 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 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" for procedures for coordinating cutting and patching with other construction activities.
  - 3. Division 02 Section **02 41 00 "Selective Demolition"** for demolition of selected portions of the building for alterations.
  - 4. Refer to other Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.
    - a. Requirements of this Section apply to mechanical and electrical installations. Refer to Division 23 and 26 Sections for other requirements and limitations applicable to cutting and patching mechanical and electrical installations.

### 1.3 SUBMITTALS

- A. **Cutting and Patching Proposal:** Submit a proposal to the Construction Administrator describing procedures well in advance of the time cutting and patching will be performed and if the Owner's Representative and/or Architect/Engineer requires approval of these procedures before proceeding. Request approval to proceed. Include the following information, as 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 affects to integrity of weather exposed or moisture resistant element.
  - 4. Describe affects to efficiency, maintenance, or safety of any operational element.
  - 5. Describe affects 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. **Utilities:** List utilities that cutting and patching procedures will disturb or affect. List utilities that will be relocated and those that will be temporarily out of service. Indicate how long service will be disrupted.
  - 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.
  - 10. 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. **Structural steel.**
  - c. **Lintels.**
  - d. **Structural decking.**
  - e. **Miscellaneous structural metals.**
  - f. **Equipment supports.**
  - g. **Piping, ductwork, vessels, and equipment.**
- 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. **Natural Gas Lines.**
    - g. **Noise and vibration control elements and systems.**
    - h. **Control systems.**
    - i. **Communication systems.**
    - j. **Electrical wiring systems.**
- 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. Existing 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 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 particular kind of Work.
- 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 General Conditions 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 or penetrate existing construction to provide for installation of temporary or permanent components or performance of other construction activities and the subsequent fitting and patching required to restore surfaces to their original condition.
  2. Do perform cutting and patching to integrate elements of temporary protection and permanent 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. Patch existing construction and finishes to 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 the original Installer; comply with the original Installer's recommendations.
  1. In general, where cutting, use hand or small power tools designed for sawing or grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
  2. To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.
  3. Cut through concrete and masonry using a cutting machine, such as a Carborundum saw or a diamond-core drill.
  4. 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.
- C. **Patching:** Patch with durable seams that are as invisible as possible. Comply with specified tolerances.
  1. Where feasible, inspect and test patched areas to demonstrate integrity of the installation.
  2. Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
  3. Where removing walls or partitions extends one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform color and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
    - a. Where patching occurs in a smooth painted surface, extend final paint coat over entire unbroken surface containing the patch after the area has received primer and second coat.
  4. Patch, repair, or re-hang existing ceilings affected by the work as necessary to provide an even-plane surface of uniform appearance.

**3.4 CLEANING**

- 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.

**END OF SECTION 01 73 29**

## 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 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 20 00 "Contract Considerations".
  - 3. Division 01 Section 01 25 00 "Substitution Procedures".
  - 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 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 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 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:
      - i) Cardboard.
      - ii) Clean dimensional wood.
      - iii) Beverage containers.
      - iv) Land clearing debris.
      - v) Concrete.
      - vi) Bricks.
      - vii) Concrete Masonry Units (CMU).
      - viii) Asphalt.
      - ix) 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](http://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**

NOT APPLICABLE

**PART 3 – EXECUTION**

**3.1 PLAN IMPLEMENTATION**

- A.** Implement the waste management plan as approved by **Owner**.
- B.** Provide training of workers, contractors, 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 one of the following methods:
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.



3. Other methods proposed by the Contractor and approved by the **Architect, Owner, and/or Construction Administrator**.

**END OF SECTION 01 74 19**

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## 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 contract closeout including, but not limited to, the following:
  - 1. Inspection procedures.
  - 2. Project record 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 29 76 "Progress Payment Procedures".
- C. Closeout requirements for specific construction activities may be included in the appropriate Sections in Divisions 02 through 50.

### 1.3 SUBSTANTIAL COMPLETION

- A. **General:** Basic contract definitions are included in Article 1 of the 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 record drawings, maintenance manuals, damage or settlement surveys, property surveys, and similar final record 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.

- 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.

#### 1.4 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 will prepare a Certificate of Acceptance. If the Work is incomplete, the 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.

#### 1.5 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 at a later date. Update As-built Drawings on a monthly basis coincident with the submittal of the Application for Payment.
  - 1. Mark record 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 record 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 Record 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 Drawing Mylar Tracings.
  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. Record 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 record drawing information and Product Data.
  4. Upon completion of the Work, submit Record Specifications to the Construction Administrator for the Owner's records.
- D. Record Product Data:** The Contractor shall maintain one (1) copy of each Product Data submittal. Note related Change Orders and markup of record 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 Record Product Data to the Construction Administrator for the Owner's records.
- E. Record 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 record purposes. Comply with the Owner's instructions regarding delivery to the Owner's Sample storage area.
- F. Miscellaneous Record Submittals:** Refer to other Specification Sections for requirements of miscellaneous record 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:** Organize operation and maintenance data into suitable sets of manageable size. Bind properly indexed data in individual, heavy-duty, 2", 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". Included but not limited to the following types of information:
1. Emergency instructions.
  2. Spare parts list.
  3. Copies of warranties.
  4. Wiring diagrams.
  5. Recommended "turn-around" cycles.
  6. Inspection procedures.
  7. Shop Drawings and Product Data.

## 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. Record 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.
13. Demonstrate startup and shutdown of mechanical equipment interrupted by the work.

### 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, gutters and downspouts.
  - 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.
  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

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## PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including Division 00 General Conditions 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 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.
- B. **Related Sections:** 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 77 00 "Closeout Procedures" specifies general closeout requirements.
  3. Division 01 Section 01 78 30 "Warranties and Bonds" specifies requirements for submittal of warranties and bonds.
  4. Appropriate Sections of Divisions 02 through 50 specify special operation and maintenance data requirements for specific pieces of equipment or building operating systems.

### 1.3 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.
1. Where maintenance manuals require written instructions, use personnel skilled in technical writing where necessary for communication of essential data.
  2. Where maintenance manuals require drawings or diagrams, use draftsmen capable of preparing drawings clearly in an understandable format.
- B. **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.

### 1.4 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 **two (2)** draft copies of each manual to the Agency Representative for review. Include a complete index or table of contents of each manual.
    - a. The Agency Representative 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 Agency Representative will return **one (1)** copy within **twenty-one (21)** calendar after final inspection, with comments.
  2. After final inspection, make corrections or modifications to comply with the Agency Representative's comments. Submit final copies to the Owner's Representative within **twenty-one (21)** calendar days of receipt of the Agency Representative's comments.
- B. **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" x 11"** paper. Provide a clear plastic sleeve on the spine to hold labels describing contents. Provide pockets in the covers to receive folded sheets.
  - 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.
  - b. 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.
2. **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.
3. **Protective Plastic Jackets:** Provide protective, transparent, plastic jackets designed to enclose diagnostic software for computerized electronic equipment.
4. **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" x 11"**, **20-lb/sq. ft** white bond paper.
5. **Drawings:** Where maintenance manuals require drawings or diagrams, provide reinforced, punched binder tabs on drawings and bind in with text.
  - a. Where oversize drawings are necessary, fold drawings to the same size as text pages and use as a foldout.
  - b. 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.

#### 1.5 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:
  1. **General system or equipment description.**
  2. **Design factors and assumptions.**
  3. **Copies of applicable shop drawings and product data.**
  4. **System or equipment identification, including:**
    - a. **Name of manufacturer.**
    - b. **Model number.**
    - c. **Serial number of each component.**
  5. **Operating instructions.**
  6. **Emergency instructions.**
  7. **Wiring diagrams.**
  8. **Inspection and test procedures.**
  9. **Maintenance procedures and schedules.**
  10. **Precautions against improper use and maintenance.**
  11. **Copies of warranties.**
  12. **Repair instructions including spare parts listing.**
  13. **Sources of required maintenance materials and related services.**
  14. **Manual index.**
- B. 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.

1. **Title Page:** Provide a title page in a transparent, plastic envelope as the first sheet of each manual. Provide the following information:
  - a. **Subject matter covered by the manual.**
  - b. **Name and address of the Project.**
  - c. **Date of submittal.**
  - d. **Name, address, and telephone number of the Construction Manager.**
  - e. **Name and address of the Architect and Owner's Representative.**
  - f. **Cross-reference to related systems in other operation and maintenance manuals.**
2. **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.
  - a. 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.
3. 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.
4. **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.
5. **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.
6. **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.
  - a. Do not use original Record Documents as part of operation and maintenance manuals.
7. **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.

#### 1.6 MATERIAL AND FINISHES MAINTENANCE MANUAL

- A. Submit **four (4)** copies of each manual, in final form, on material and finishes to the Owner's Representative 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.
  1. **Manufacturer's Data:** Provide complete information on architectural products, including the following, as applicable:
    - a. Manufacturer's catalog number.
    - b. Size.
    - c. Material composition.
    - d. Color.

- e. Texture.
- f. Reordering information for specially manufactured products.
- 2. **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.
- C. **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.**

#### 1.7 EQUIPMENT AND SYSTEMS MAINTENANCE MANUAL

- A. Submit **four (4)** copies of each manual, in final form, on equipment and systems to the Owner's Representative 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.**
  - 3. **Maintenance Procedures:** Provide information detailing essential maintenance procedures, including the following:
  - 4. **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.**



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## 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 warranties required by the Contract Documents, including manufacturer's standard warranties on products and special warranties.
  - 1. Refer to the General Conditions for terms of the Contractor's period for correction of the Work.
- B. **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 50 Sections for specific requirements for warranties on products and installations specified to be warranted.
  - 5. Certifications and other commitments and agreements for continuing services to Owner are specified elsewhere in the Contract Documents.
- C. **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 **eighteen (18)** months from the date of Substantial Completion of the Work. In addition, the Contractor shall furnish the warranties listed below. Submit four (4) copies of each to the Construction Administrator in the supplier's standard form or in the form given below if there is no standard form available.

- G. **Specification/Warranty Table:** The General Contractor shall provide for all warranties as shown in the Specification/Warranty table:

<b>Specification / Warranty Table</b>		
Item No.	Section No.	Specification Product/Warranty
1.	03 <u>03 01 00</u>	<b>Concrete crack and spall repairs:</b> 3 year General Contractor's warranty for installation
2.	03 <u>03 30 00</u>	<b>Cast in place concrete</b> 2 year General Contractor's warranty for materials and workmanship.
3.	04 <u>04 50 00</u>	<b>Masonry:</b> 3 year General Contractor's warranty for materials and workmanship
4.	05 <u>05 50 00</u>	<b>Miscellaneous Metals:</b> 5 year unlimited Manufacturer's warranty for, materials and installation, and; 3 year General Contractor's warranty for installation
5.	06 <u>06 10 00</u>	<b>Rough Carpentry:</b> 3 year General Contractor's warranty for installation
6.	06 <u>07 52 00</u>	<b>Asphalt Shingles</b> 3 year General Contractor's guarantee for transitions to existing roof X existing asphalt shingle warranty to remain in place
7.	07 <u>07 52 00</u>	<b>Single-Ply Membrane Roofing, Base Flashing and Insulation:</b> 30 year unlimited, materials and installation the manufacturer's no dollar limit (NDL) warranty, and; 3 year General Contractor's warranty for installation.
8.	07 <u>07 52 00</u>	<b>Exterior Expansion Joint Covers:</b> 5 year material and workmanship, including weathertightness. 3 year General Contractor's warranty for installation.
9.	07 <u>07 52 00</u>	<b>Insulating glass:</b> 10 year against failure of hermetic seal, interpane dusting, or misting including replacement of unit. 3 year General Contractor's warranty for installation.
10.	07 <u>07 62 00</u>	<b>Sheet Metal and Flashing</b> 3 year General Contractor's warranty for installation.
11.	07 <u>07 71 00</u>	<b>Roof Specialties - Skylights:</b> 5 year against failure or defects of materials 3 year General Contractor's warranty for installation.
12.	07 <u>07 71 00</u>	<b>Roof Specialties - Railings:</b> 5 year against failure or defects of materials 3 year General Contractor's warranty for installation.
13.	10 <u>10 75 16</u>	<b>Flag Poles:</b> 5 year material and workmanship, including weathertightness. 3 year General Contractor's warranty for installation.
14.	22 <u>22 20 00</u>	<b>Plumbing:</b> 5 year material and workmanship, including weathertightness. 3 year General Contractor's warranty for installation.
15.	23 <u>23 05 00</u>	<b>Roof Mechanical;</b> 3 year General Contractor's warranty for installation.
16.	26 <u>26 05 02</u>	<b>Roof Electric:</b> 3 year General Contractor's warranty for installation.

- H. Submit certification that finish materials are fire rated as specified.  
I. Form of Warranty: Warranties shall be submitted in following format:



<b>Warranty</b>			
<i>Commissioner: Melody A. Currey Department of Administrative Services DAS Commissioner's Office 450 Columbus Boulevard, Suite 1501 Hartford, CT 06103</i>			
<i>Project Number: BI-2B-433 Project Title: Roof Replacement and Weatherproofing 460/470 Capitol Avenue</i>			
<b>I (We) hereby warranty</b>			
<i>the</i>	_____	<i>work on the referenced project for a period of</i>	_____ <i>years</i>
<i>from</i>	_____	<i>, 20</i>	_____ <i>against failures of workmanship and materials in accordance</i>
<i>with the requirements of Section</i> _____ <i>, Page</i> _____ <i>, Paragraph</i> _____ <i>, of the Specifications.</i>			
<i>Installer</i>	<input type="checkbox"/>	<i>Subcontractor</i>	<input type="checkbox"/>
<i>Vendor/Suppliers</i>	<input type="checkbox"/>	<i>Manufacturer</i>	<input type="checkbox"/>
<i>Installer or Subcontractor or Vendor/Suppliers or Manufacturer Name:</i> _____			
<i>Installer or Subcontractor or Vendor/Suppliers or Manufacturer Signature:</i> _____			
<i>General Contractor's Name</i> _____			
<i>General Contractor's Signature:</i> _____			
<i>or</i>			
<i>General Contractor's Authorized Agent Signature:</i> _____			

- J. Bonds shall be by approved Surety Companies, made out to the Commissioner, Department of Administrative Services on companies' standard form.
- K. Warranties, Guarantees, or bonds supplied by the General Contractor's Subcontractors or Vendors/Suppliers or Manufacturers shall reference the project name, number, and location and be certified by the General Contractor to be for the product and installation on the project and must be countersigned by the General Contractor.
- L. Bonds shall be by approved Surety Companies, made out to the Commissioner, Department of Administrative Services, on company's standard form.
- M. 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 Contractor, subcontractor, supplier, or manufacturer. Submit a draft to the Owner, through the Construction Administrator, for approval prior to final execution.

1. Refer to Divisions 02 through 50 Sections for specific content requirements and particular requirements for submitting special warranties.
- C. Form of Submittal: At Final Completion compile two (2) copies of each required warranty properly executed by the Contractor, or by the Contractor, subcontractor, supplier, or manufacturer. Organize the warranty documents into an orderly sequence based on the table of contents of the Project Manual.
- D. 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.
  1. 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.
  2. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project title or name, and name of the Contractor.
  3. 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

### 1.01 IN GENERAL

- A. The General Conditions, and all parts of the Bid and Contract Documents are made part of this Section as if fully repeated herein.

### 1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Divisions 0 and 1 of the project manual
- B. Section 02 41 00 – Selective Demolition
- C. Section 02 82 13 – Asbestos Containing Roofing Material Abatement
- D. Section 02 83 00 – Lead Paint Activity
- E. Section 02 84 33 – Removal and Disposal of PCBs
- F. Section 03 30 00 – Concrete Restoration
- G. Section 04 50 00 – Masonry
- H. Section 05 50 00 – Miscellaneous Metals
- I. Section 06 10 00 – Rough Carpentry
- J. Section 07 52 00 – Elastomeric Membrane Roofing
- K. Section 07 62 00 – Sheet Metal and Flashing
- L. Section 22 20 00 – Plumbing
- M. Section 50 00 00 – Project-Specific Available Information

### 1.03 SUMMARY OF WORK

This Section specifies requirements for the following Scope of Work:

- A. Provide a phasing plan for demolition work for Owner-Occupant coordination.
- B. Refer to Section 02 82 13 – Asbestos Containing Roofing Material Abatement and Section 05 50 00 – Miscellaneous Metals for removal of ACM materials.
- C. Remove and dispose of existing roofing, including stone surfacing, stone ballast, roof membrane, insulation, sheet metal flashings, and deteriorated wood blocking down to the existing roof deck.
- D. Roof Area E – Remove existing roof assembly, edge metal, gutter, flashings, etc. for roof restoration.
- E. Remove all existing metal and other existing flashings at roof perimeters, vent pipes, unit curbs, penetrations, etc. as required to properly complete the work. (Refer to Existing Roof System Cross Sections in the Contract Drawings for additional information.)
- F. Remove existing pourable sealer pockets for replacement with membrane flashings.
- G. Cut existing vent pipes as detailed for extension relative to finished roof surface(s).

- H. Temporary removal, storage, and protection of existing rooftop equipment scheduled to be reinstalled. Remove abandoned equipment and roof curbs.
- I. Remove existing equipment, utilities, and assemblies as indicated.
- J. Remove, protect, and/or store all equipment, utilities, and assemblies to remain or to be reinstalled.
- K. Remove existing dome skylights at Roof Area A and provide temporary enclosure until the new units are installed.
- L. Remove and dispose of rooftop mechanical equipment and associated components scheduled for replacement including but not limited to equipment curbs, sleepers, piping, insulation, utilities, electrical wiring, ductwork, etc.
- M. Remove and reinstall utility pipe supports and penetrations at utilities to remain. Temporarily support pipes, to remain in place during construction.
- N. Where existing drain bowls are to remain, remove and dispose of the existing roof drain strainer, flashing, and hardware assemblies. Clean drain bowls of gravel, debris, and adhesive. Snake vertical leaders to achieve free-flow condition.
- O. Where existing drain bowls are to be replaced, remove, and dispose of the existing drain bowls, hardware, and accessories. Remove drain to leader connections for extension.
- P. Maintain all roof drains in working condition at the end of each workday. Provide temporary sleeves during demolition.
- Q. All roof penetrations are to be 100% weather-tight at the end of each workday.
- R. Remove rubbish and debris from the project site daily; do not allow accumulations inside or outside the buildings.
- S. Supply all necessary chutes, disposal facilities, transportation, and labor necessary to dispose of all demolished materials, dirt, and debris off-site in a legal dumping area. The Contractor shall obtain all permits necessary to transport and dispose of all materials, rubbish, and debris.
- T. Temporary protection during all removal operations to prevent water, dust, and debris infiltration to the interior.

#### 1.04 JOB CONDITIONS

- A. SPECIAL NOTE: Portions of the existing flashings and roofing membrane have been tested and found to contain Asbestos Containing Materials (ACM). The Contractor shall comply with the National Emission Standard for Hazardous Air Pollutants (NESHAP) regulation published in the Federal Register under 40 CFR, Part 61, subpart M. Specific attention is directed to Appendix A of this regulation entitled,

Interpretive Rule Governing Roof Removal Operations. In addition to these regulations, the Contractor shall comply with OSHA Regulation (29 CFR Parts 1910 et al – Occupational Exposure to Asbestos; Final Rule) and all other State and Local guidelines regarding asbestos containing material removal and disposal. For clarification, refer to Section 02 82 13 Asbestos Containing Material Removal.

- B. Lead Paint and Flashings: Lead containing materials were identified at the Work Site. Reference Inspection Report in Section 50 30 00 Hazardous Building Materials Inspection and Inventory. The Contractor shall be responsible for compliance with OSHA lead in construction (29 CFR 1926.62 "Lead Exposure in Construction: Interim Final Rule") and RCRA (USEPA and CT DPH and DEEP) disposal requirements for completion of the demolition and roof replacement work. Lead containing materials shall be managed and disposed of by the Contractor in strict accordance to applicable Local, State, and Federal laws.
- C. Polychlorinated Biphenyls: Testing for polychlorinated biphenyls (PCBs) is not required on this project. The existing glazing and sealants at the clerestory skylight units at Roof Area C are to be removed by the contractor and disposed of as PCB waste.
- D. Provide temporary water stops to edges of newly replaced roofing or areas of temporary work.
- E. Provide temporary roof protection or coverings for delays in the work. Maintain watertight conditions at all time.
- F. The buildings will remain in use during construction. Provide temporary protection, barriers, warning lines, and overhead protection to protect the building occupants, the public, the building, and the Owner's property during construction operations.
- G. Care shall be taken during the roof removal process so as not to damage the substrates. Decking damaged due to negligence during removal of existing roofing shall be replaced or repaired by the Contractor at no expense to the Owner.
- H. Coordinate work locations with the Owner as specified.

#### 1.05 HOT WORK PROCEDURES

- A. A HOT WORK Permit is required for any operation that involves open flames or producing heat and/or sparks. This includes, but is not limited to: brazing, cutting, grinding, soldering, and welding.
- B. Fully charged, inspected, and approved fire extinguishers shall be on site at all times. No cutting, grinding, or welding of any kind shall proceed without an approved fully charged fire extinguisher.
- C. Make sure construction in the area is non-combustible including insulation.
- D. Remove combustible contents or cover with FM approved blankets or pads.

- E. Follow procedures outlined under FM Global Resources 'Don't Get Burned by Hot Work' and 'Hot Work Permit Form – F2360.

#### 1.06 SUBMITTALS

- A. Submit a detailed Removal Plan to the Owner and Engineer to include the following:
  - 1. Proposed means and methods to be utilized in the legal removal, handling, transportation, and disposal of the existing roof systems and related debris, including ballast, insulation, membranes, metals, roof top equipment, abandoned curbs, etc.
  - 2. Proposed locations of chutes, dumpsters, cranes, hoists, and other temporary equipment or facilities required for demolition work.
  - 3. Temporary Protection Plan in accordance with Section 01 50 00 TEMPORARY FACILITIES AND CONTROLS.
  - 4. Electrical and mechanical removal work in accordance with Divisions 23 and 26 and associated drawing scope.

#### 1.07 DIMENSIONS AND QUANTITIES

All dimensions and quantities shall be determined or verified by the Contractor. The Contract Drawings have been compiled from various sources and may not reflect the actual condition at the time of construction. The Contractor is advised to take all precautions and make all investigations necessary to install the proposed work. The Owner will not consider unfamiliarity with the job conditions as a basis for additional compensation.

#### 1.08 REMOVAL AND DISPOSAL EQUIPMENT

- A. Conveyances: Buggies or wheelbarrows used on roofs to transport removed debris to chutes or crane apparatus location shall be limited to 3/8 cubic yard capacity.
- B. Chutes: Provide enclosed chutes for debris transfer from roof areas to dumpsters. Debris shall not spill from the bottom of the chute directly onto the ground. Direct chutes into an approved construction debris container (dumpster). Control and contain dust and noise from falling debris by use of breaks in vertical alignment of chute or tarps covering dumpster. Provide a hose with a nozzle connected to an adequate water supply, near chute outlet, to wet debris as necessary for dust control.
- C. Hoists/Cranes: Provide hoists or cranes to remove debris and transport materials to and from the roof. Materials shall be properly secured to prevent loose materials/debris from breaking loose from hoisting apparatus. Debris to be transported from the roof shall be placed directly in approved construction debris containers. Proper protection of wall areas for their entire height shall be provided in the form of heavy duty tarps secured or affixed to exterior walls directly adjacent to or under the area of hoisting.
- D. The use of skid steer, mini excavator, etc. type removal equipment on the roof is prohibited.

- E. Mechanical cutting equipment: Roof cutting equipment, if used, shall be equipped with operable blade depth setting mechanisms in order to control the cutting depth of the blade and alleviate the potential of damaging the structural deck during cutting operations.
- F. The use of spark producing equipment or tools on the roof or in the vicinity of the gas or refrigeration lines is prohibited.

## PART 2 – MATERIALS

### 2.01 NOT USED

## PART 3 - EXECUTION

### 3.01 GENERAL

- A. During the removal of existing roofing and related materials, the Contractor shall report to the A/E, Owner, and/or CA areas of damaged, deteriorated or otherwise unsuitable structural deck or substrates uncovered during the work. Do not cover or remove unacceptable deck or substrates areas until reviewed by the Engineer or Owner. Provide temporary protection to the areas in question. Use care in the removal of roof systems so as not to damage the substrates.

### 3.02 REMOVALS

- A. Remove and dispose of existing roof cover, insulation and flashing systems as indicated within the Contract Documents.
- B. Remove, handle, transport and dispose of ACM as specified in this Section and in Section 02 82 13 Asbestos Containing Roofing Material Abatement.
- C. Remove, handle, transport, and dispose of lead coated materials as specified in each technical section.
- D. Remove and dispose of existing penetration flashings, counter flashings, sheet metal flashings, and related sheet metal items as indicated in preparation for new sheet metal flashings and accessories.
- E. Remove and dispose of existing deteriorated perimeter wood blocking as indicated in preparation for new wood blocking. The intent of the project is to reuse and refasten as much of the original wood blocking as practical.
- F. Remove, disconnect, store, and reinstall existing rooftop electrical and mechanical equipment in preparation for replacement roof systems. Removals, lengthening/shortening, and reinstallations of electrical and mechanical equipment, including mechanical/electrical connections are to be performed by licensed

tradesmen. Costs for mechanical/electrical work shall be included in the Contractor's bid price. Refer to specification section Divisions 23 and 26 for additional information.

- G. Carefully remove existing roof drains to avoid damage to existing leader piping and substrates to remain. Remove and replace roof drains and leader piping prior to or concurrently with roof replacement. The Contractor is responsible for interior damage as a result of roof drain replacement. Refer to Section 22 20 00 Plumbing for additional information.

### 3.03 ROOF DECK REMOVAL

- A. Areas requiring structural decking replacement shall first be reviewed with the A/E, Owner, and/or CA prior to removal. At that time, the extent (and dimensions) of replacement for this area shall be defined.
- B. Supply all tarps, warning lines and other means necessary to protect the building interior from damage, as well as the occupants.
- C. Removals shall include extending between two (2) support members while ensuring that adjacent panels also extend two (2) supports minimum.
- D. The limits of deck removal shall be defined with a clean, straight saw-cut through the decking or at current roof deck panel joints. Remove areas of deteriorated decking by cutting to the nearest support. Support the deteriorated panel sections during cutting and lift out once free.
- E. Clear all debris from deck surface and flutes prior to removing deteriorated decking.

### 3.04 CLEAN-UP AND DISPOSAL

- A. Upon completion of the work of this Section and following removal of debris from roof levels, leave site in clean condition satisfactory to A/E, Owner, and/or CA on a daily basis in accordance with Division 1 requirements. Clean-up shall include disposal of all items and materials not required to remain the property of the Owner, as well as debris and rubbish resulting from demolition operations. Dispose of debris in accordance Section 07 74 19 - Waste Management Disposal.

**END OF SECTION**



## PART 1 - GENERAL

### 1.01 SCOPE

- A. The work specified herein shall be the removal of asbestos-containing roofing materials by persons who are knowledgeable, qualified, licensed, and trained in the removal, treatment, handling, and disposal of asbestos-containing roofing material, and the subsequent cleaning of the affected environment. The Contractor shall have a Competent Person in control on the job site with authority to take prompt corrective measures at all times during roofing removal work. This person must comply with applicable Federal, State, and Local regulations, which mandate work practices, and be capable of performing the work of this contract.
- B. The State will submit CT Form 1165 Hazardous Material Assistance Request and retain the services of a Project Monitor for protection of its interests and those using the building. Area air sampling and a visual inspection to ensure proper clean-up of the work area will be conducted as deemed necessary.
- C. Deviations from this Specification require the written approval of the State of Connecticut.

### 1.02 DESCRIPTION OF WORK

- A. The Contractor shall supply all labor, materials, equipment, services, insurance (with specific coverage for asbestos), and incidentals which are necessary or required to perform the work in accordance with applicable governmental regulations and these specifications.
- B. The Contractor shall remove and dispose of the asbestos-containing roofing material documented in the attached asbestos roofing inspection report.

### 1.03 DEFINITIONS

- A. AGENCY - The authoritative force, usually at the state level, or their representative.
- B. ASBESTOS-CONTAINING MATERIAL (ACM) - Any material containing more than one percent asbestos.
- C. COMPETENT PERSON - In addition to the definition in 29 CFR 1926.32(f), one who is in the workplace and selecting the appropriate control strategy for asbestos exposure, who has the authority to take prompt corrective measures to eliminate them, as specified in 29 CFR 1926.32(f); in addition, for Class I and Class II work who is specially trained in a training course which meets the criteria of EPA's Model Accreditation Plan (40 CFR Part 763) for Supervisor, or its equivalent.
- D. HIGH-EFFICIENCY PARTICULATE AIR (HEPA): A filter capable of trapping and retaining at least 99.97 percent of all mono-dispersed particles 0.3 microns in diameter.

- E. LEAK-TIGHT: - Solids or liquids cannot escape or spill out. It also means dust-tight.
- F. REGULATED AREA: - Area established by the Competent Person to demarcate areas where airborne concentrations of asbestos exceed, or there is a reasonable possibility they may exceed, the Permissible Exposure Limit.
- G. NON-FRIABLE REGULATED ASBESTOS -CONTAINING MATERIAL – means any material containing more than 1 percent asbestos as determined using the method specified in appendix A, subpart F, 40 CFR part 763, section I, Polarized Light Microscopy, that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.
- H. REGULATED ASBESTOS -CONTAINING MATERIAL (RACM) – means (a) Friable asbestos material, (b) Category I nonfriable ACM that has become friable, (c) Category I nonfriable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading, or (d) Category II nonfriable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations regulated by this subpart.

#### 1.04 REFERENCES

- A. The current issue of each document shall govern. Where conflict among requirements or with these specifications exists, the more stringent requirements shall apply.
  - 1. Occupational Safety and Health Administration (OSHA) 29 CFR 1926.1101 - Asbestos
  - 2. Environmental Protection Agency (EPA) 40 CFR 61, Subpart M - National Emission Standards for Hazardous Air Pollutants; Asbestos NESHAP Revision; Final Rule. 40 CFR 763, Appendix C to Subpart E - Asbestos Model Accreditation Plan (MAP)
  - 3. State of Connecticut, Department of Public Health Regulations (DPH) Section 19a-332a-1 through 19a-332a-16 - Standards for Asbestos Abatement

#### 1.05 SUBMITTALS AND NOTICES

- A. Prior to commencement of asbestos abatement work, submit to the A/E and Construction Coordinator and receive approval and/or acknowledgment of following:
  - 1. State notifications (when applicable).
  - 2. Asbestos worker Medical Clearance to Wear a Respirator documentation.
  - 3. Asbestos Worker and Competent Person Training documentation.
  - 4. Asbestos Worker Respiratory Fit Testing documentation.
- B. Within 35 days following the date the asbestos waste trailer leaves the job site, submit to the A/E and DAS PM / CA:
  - 1. Waste shipment record for disposal of asbestos roofing material.
  - 2. "Chain of Custody" forms and reports.
- C. Pre-Construction Submittals: Prior to the commencement of the required work, the Contractor shall provide the Owner and Architect with copies of the following:

1. At least ten (10) days prior to the start of asbestos abatement, the Asbestos Abatement Contractor shall notify the Department Of Public Health Asbestos, as required by the Regulations of Connecticut State Agencies, Section 19a-332a-3, and submit an Abatement Notification Form with a copy to the A/E and Owner.
- D. Within thirty-five (35) days following the date the asbestos waste trailer leaves the job site, the Abatement Contractor shall submit to the A/E and Owner:
  1. Waste shipment manifest(s) for disposal of all asbestos containing roofing material.
- E. The landfill accepting the wastes shall be notified prior to shipping for scheduling to insure that adequate personnel and apparatus are available at the time of disposal; and the asbestos containing materials will be delivered in separate shipments. It shall not be transported with any other materials. The contractor shall not be paid for the Abatement work until the signed waste shipment manifest(s) is received by the A/E and Owner.

#### 1.06 PERSONNEL PROTECTION

- A. Provide and require all workers to wear protective clothing and half-face respirators when present in the Regulated Area established by the Competent Person.

#### 1.07 WORKER TRAINING REQUIREMENTS

- A. Training for the Competent Person, Supervisor, and Workers shall meet the requirements of Federal and State Regulations.

### PART 2 - PRODUCTS

#### 2.01 MATERIALS

- A. Polyethylene sheeting and disposal bags shall be six (6) mil.
- B. Labels and signs shall conform to applicable regulations.

#### 2.02 TOOLS AND EQUIPMENT

- A. Air monitoring equipment of the type and quantity required to monitor operations and conduct personnel exposure surveillance per OSHA requirements.
- B. Protective clothing, respirators, filter cartridges, air filters and sample filter cassettes shall be provided in sufficient quantities for the project.
- C. Waste Containers shall be lined with 2 layers of 6 mil polyethylene sheeting and 1 layer of polypropylene burlap.

### PART 3 EXECUTION

### 3.01 PREPARATION OF WORK AREA

- A. Post warning signs meeting the specifications of OSHA 29 CFR 1910 and 29 CFR 1926.1101 at each Regulated Area. In addition, signs shall be posted at all approaches to Regulated Areas so that an employee may read the sign and take the necessary protective steps before entering the area.
- B. Prior to start of work, and as needed during the job, the Competent Person shall inspect the work site and determine whether the roofing material is non-friable asbestos containing material and will likely remain non-friable asbestos containing material during removal activities.
- C. Shut down and seal (with duct tape and 6-mil. poly sheeting) windows and roof level heating and ventilation air intakes that are in position to entrain dust or vapors from the roofing activities. Coordinate shut down of mechanical systems with Agency personnel. Where intake shutdown is not feasible (as determined by Agency), supply and install horizontal or vertical extensions to relocate the opening of the air intake outside or above the regulated area so as not to entrain dust and vapor emissions from the roofing removal and re-roofing activity.

### 3.02 ASBESTOS-CONTAINING ROOFING MATERIAL REMOVAL

- A. All work shall be performed in accordance with OSHA Construction Industry Standard (29 CFR 1926.1101) and EPA NESHAP Standard (40 CFR 61) and applicable State of Connecticut Regulations.
- B. A Competent Person shall be on the job at all times to ensure proper work practices throughout the project.
- C. The Contractor shall utilize methods, which do not sand, grind, cut, or abrade the Asbestos-Containing Roofing Material. Should roofing materials be identified as regulated asbestos-containing material additional federal and state regulations will apply.
- D. Pick up or HEPA vacuum asbestos-containing roofing debris from non-intact roofs prior to removal of the roofing. Bag debris for disposal.
- E. Utilize wet methods to remove asbestos-containing roofing materials unless such wet methods are not feasible or will create safety hazards, as determined by the competent person, in writing.
- F. HEPA vacuum asbestos-containing dust and debris left after the removal of asbestos-containing roofing. Where asbestos-containing built-up roofing is removed, HEPA vacuum the roof decking following roofing removal. Bag dust and debris for disposal.
- G. Remove asbestos-containing flashings and associated cements or mastics using manual methods (such as axe, knife, or shovel). Do not sand, abrade, or grind these materials.

- H. Asbestos-containing roofing material shall be carried or passed to the ground by hand or lowered to the ground by crane or hoist. Do not drop asbestos-containing roofing material to the ground or into the dumpster. Transfer lowered asbestos-containing roofing material to the leak tight disposal dumpster carefully so as not to disperse dust.

### 3.03 DISPOSAL OF ASBESTOS-CONTAINING ROOFING MATERIAL

- A. Disposal of asbestos-containing and/or asbestos contaminated material shall occur at an authorized site and must be in compliance with the requirements of, and authorized by the Office of Solid Waste Management, Department of Environmental Protection, State of Connecticut, or other designated agency having jurisdiction over solid waste disposal.
- B. Asbestos warning signs must be attached to containers used to transport asbestos-containing waste. Warning signs shall be posted during loading and unloading of disposal containers. The signs must be posted so that they are plainly visible.
- C. Label containers of asbestos-containing waste material or wrapped asbestos-containing waste material using warning labels specified by OSHA 29 CFR 1926.1101. Label asbestos-containing waste material destined for off-site transport with the name of the waste generator and the location where the waste was generated.

### 3.04 CONTRACTOR PERSONAL AIR MONITORING RESPONSIBILITY

- A. Conduct air sampling to assure that workers are using appropriate respiratory protection in accordance with OSHA Construction Industry Standard 1926.1101. Documentation of air sampling results must be recorded at the work site within twenty-four (24) hours and shall be available for review until the job is complete.
- B. Produce a written initial asbestos exposure assessment prior to starting asbestos roofing removal work in compliance with OSHA Standard 1926.1101. Keep the exposure assessment on site for review by all concerned parties.

**END OF SECTION**

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## PART 1- GENERAL

### 1.01 SCOPE

- A. Work under this item shall include activities impacting various materials containing or covered by lead paint and associated work by persons who are knowledgeable, qualified, and trained in the removal, treatment and handling of lead contaminated materials, including the transportation and disposal of non- hazardous and hazardous lead construction and demolition bulky waste containing or contaminated with lead, the recycling of metallic components covered with lead paint, and the subsequent cleaning of the affected environment. Lead paint includes paint found to contain any detectable amount of lead by Atomic Absorption Spectrophotometry (AAS) or X-Ray Fluorescence (XRF).
- B. All activities shall be performed in accordance with, but not limited to, the current revision of the OSHA Lead in Construction Regulations (29 CFR 1926.62), the USEPA RCRA Hazardous Waste Regulations (40 CFR Parts 260 through 274), and the CT DEEP Hazardous Waste Regulations (22a-209-1 and 22a-449(c)).
- C. The lead paint activity shall include the demolition/renovation, removal and/or disposal of building components coated with lead painted surfaces as identified on the Contract Plans and Specifications.
- D. Deviations from these Specifications require the written approval of the Engineer.

### 1.02 DESCRIPTION OF WORK

- A. The following details the extent of each phase of operation designated for this project. Phase areas may be combined or divided at the direction of the Engineer. Proceed through the sequencing of the work phases under the direction of the Engineer.

#### **Non-metallic Components To Be Impacted (if necessary)**

- **LBP has NOT been identified on various non-metallic components. At the time of the inspection only metal building components were to be impacted as part of this renovation project.** Any non-metallic building components that may need to be impacted as part of this renovation will need to be either assumed to contain lead paint or sample analysis of the paint must be taken to determine that paint has no lead present. **CONTRACTOR CANNOT ASSUME PAINTED COMPONENTS ARE NEGATIVE.** All renovation/demolition work specified in other areas of these Specifications impacting those materials shall be conducted within an established lead control (regulated) area with a remote hand-wash facility/decontamination system in accordance with OSHA Lead in Construction Standards. Engineering controls and work practices shall be utilized to prevent the spread of lead dust and debris beyond the work area and limit the generation of airborne lead. Lead painted debris generated from the renovation/demolition of those materials, shall be containerized and stored on-site with the remainder of the non-metallic building waste materials. The Engineer will conduct TCLP testing or mass balance calculations on a representative sample of the stored waste materials to determine if the materials shall be disposed of as hazardous or non-hazardous construction waste. Should

the waste material be determined to be hazardous, it shall be handled and disposed of in accordance with USEPA/CT DEEP Hazardous Waste Regulations.

### **Metal Components To Be Impacted**

- LBP was found to be present on skylight frames, storage doors, cooling tower beams, vent pipes, small exhaust fans, staircase (steps/framing) and air handlers. All renovation/demolition work specified in other areas of these Specifications impacting those materials shall be conducted within an established lead control (regulated) area with a remote hand-wash facility/decontamination system in accordance with OSHA Lead in Construction Standards. Engineering controls and work practices shall be utilized to prevent the spread of lead dust and debris beyond the work area and limit the generation of airborne lead. Lead painted debris generated from the renovation/demolition of those materials, shall be containerized and stored on-site with the remainder of any non-metallic building waste materials. All steel and metal generated from the renovation/demolition of the building shall be segregated and recycled as scrap metal at an approved facility. The recycling of scrap metal (regardless of LBP concentration) is exempt from USEPA RCRA and CT DEEP Hazardous Waste Regulation.

### **Surface Preparations**

- Contractor shall be responsible for any surface preparation required in areas where repainting or refinishing is specified. Surface preparation techniques such as sanding, sandblasting, scraping, power-washing, etc. which are utilized on surfaces coated with lead paint must be conducted in accordance with the OSHA worker protection and USEPA RCRA/CT DEEP Waste disposal standards. All work shall be conducted within an established lead control (regulated) area with a remote hand-wash facility/decontamination system. Engineering controls and work practices shall be utilized to prevent the spread of lead dust and debris beyond the work area and limit the generation of airborne lead. Lead painted debris generated from the renovation/demolition of those materials, shall be containerized and stored on-site with the remainder of any non-metallic building waste materials. The Engineer will conduct TCLP testing or mass balance calculations on a representative sample of the stored waste materials to determine if the materials shall be disposed of as hazardous or non-hazardous construction waste. Should the waste material be determined to be hazardous, it shall be handled and disposed of in accordance with USEPA/CT DEEP Hazardous Waste Regulations. If the waste material is determined to be non-hazardous, it shall be disposed of as non-hazardous construction and demolition (C&D) waste at an approved CT DEEP Solid Waste landfill.
- B. Segregate all steel and metal components generated from the renovation/demolition, regardless of lead content, for recycling as scrap metal. Recycling of lead painted metal is exempt from regulation by the USEPA and CT DEEP as hazardous waste.
- C. Waste characterization sampling (TCLP)/mass balance calculations for leachable lead have not been previously performed by the Engineer on any non-metallic waste building material debris expected to be generated during the renovation/demolition. If



non-metallic painted building components are impacted as part of this renovation, the Contractor shall segregate and containerize those materials for TCLP testing/mass balance calculations by the Engineer. Based on the results of the sampling/calculations the materials may be characterized as hazardous waste, and if so, must be handled in accordance with CT DEEP and USEPA RCRA regulations.

- D. The Contractor shall conduct exposure assessments for the tasks required which impact lead paint in accordance with OSHA 29 CFR 1926.62(d) and shall implement appropriate personal protective equipment until negative exposure assessments are developed.

### 1.03 SUBMITTALS AND NOTICES

- A. Prior to the start of any work that will generate hazardous lead waste above conditionally exempt small quantities, the Contractor shall obtain from the Engineer/CT DEEP a temporary EPA Hazardous Waste Generators ID, unless otherwise directed by the Engineer.
- B. Provide a copy of the USEPA permits for disposal and transport of hazardous lead bearing waste for each proposed hauler/disposal facility. A licensed hazardous waste transporter and a licensed hazardous waste treatment/disposal facility shall be secured in conformance with all federal and state regulations and be approved by the Engineer.
- C. Fifteen (15) working days prior to beginning work that impacts lead paint, the Contractor shall submit the following to the Engineer:
  - 1. For projects when the intent is to mitigate lead hazards and provide lead-safe conditions for building occupants, a valid CTDPH Lead Abatement Contractor License and copies of employee certifications/licensed as CTDPH Lead Abatement Supervisors or Workers.
  - 2. Copies of all employee certificates, dated within the previous twelve (12) months, relating to OSHA lead awareness and hazard communication training and training in the use of lead-safe work practices.
  - 3. Documentation dated within the previous twelve (12) months, from a physician certifying that all employees who may be exposed to lead in excess of the background level have been provided with an opportunity to be medically monitored to determine whether they are physically capable of working while wearing the respirator required without suffering adverse health effects. In addition, document that personnel have received medical monitoring required in 29 CFR 1926.62. They shall also be informed of the specific types of respirators the employee shall be required to wear and the work he/she will be required to perform as well as special workplace conditions such as high temperature, high humidity and chemical contaminants to which he/she may be exposed. A copy of the medical records of each employee shall be available on the job-site.

4. Documentation dated within the previous six (6) months, of biological monitoring including initial blood lead level and zinc protoporphyrin level test results prior to the workers first entry into the Work Areas.
    - a. Workers with blood lead levels in excess of fifty (50) micrograms/deciliter will not be permitted in the Regulated Area. The Contractor shall follow management of employee's blood lead levels in accordance with OSHA 29 CFR 1926.62.
    - b. The Contractor shall submit semi-annual blood lead level and zinc protoporphyrin level test documentation to the Engineer for all workers that enter the Regulated Area for projects in excess of six (6) months in duration.
  5. Documentation dated within the previous twelve (12) months, of respiratory fit testing for all employees who must don a tight-fitting face piece respirator in order to perform activities impacting lead. This fit testing shall be in accordance with qualitative procedures as detailed in 29 CFR 1910.134.
  6. An exposure assessment for each specific lead job which will be performed during the course of this project. The data must meet the requirements of OSHA 29 CFR 1926.62. If data from prior lead project(s) is submitted (i.e. a negative exposure assessment), the following information is required:
    - a. Date of project
    - b. Description of monitoring, analysis and work operations and practices
    - c. Type of activity conducted, concentration and application of lead
    - d. Engineering controls
    - e. Experience of workers and Supervisors
  7. Project time schedule for each phase of work.
  8. Copies of state-approved certificates for the proposed non-hazardous construction and demolition (C&D) lead debris disposal facility and any concrete/wood or scrap metal recycling facilities.
  9. The name and qualifications of the individual acting as the Competent Person for the duration of project activities impacting lead. This individual shall act as the Contractor's OSHA Competent Person during activities impacting lead, shall have a minimum of three years working experience performing activities that impact lead paint, shall be capable of identifying existing lead hazards and shall have the authority to implement corrective measures to eliminate such hazards. The Competent Person shall be on-site at all times during activities impacting lead, shall comply with applicable Federal, State and Local regulations which mandate work practices, and shall be capable of performing the work of this contract. No other individual shall later be substituted as Competent Person without prior approval by the Engineer.
- D. No activity shall commence until a copy of all required submittals have been received and found acceptable to the Engineer. Those employees added to the Contractor's original list will be allowed to perform work only upon submittal of all required paperwork to, and review by, the Engineer.

- E. Provide the Engineer, within thirty (30) days of completion of the project site work, a compliance package; which shall include, but not be limited to, the following:
  - 1. Copies of the abatement contractor's license (if applicable);
  - 2. Worker licenses, training certificates, medical clearance and respiratory fit testing documentation;
  - 3. Competent persons (supervisor) job log;
  - 4. OSHA-compliant personnel air sampling data and exposure assessments;
  - 5. Completed waste shipment papers for non-hazardous lead construction and demolition (C&D) bulky waste and/or concrete/wood/scrap metal recycling
  - 6. Completed certified hazardous waste manifests for hazardous lead debris.

## PART2 - PRODUCTS

### 2.01 MATERIALS

- A. All materials shall be delivered to the job site in the original packages, containers, or bundles bearing the name of the manufacturer, the brand name and product technical description.
- B. No damaged or deteriorating materials shall be used. If material becomes contaminated with lead, the material shall be decontaminated or disposed of as lead-containing waste material. The cost to decontaminate and dispose of this material shall be at the expense of the Contractor.
- C. Fire retardant polyethylene sheet shall be in roll size to minimize the frequency of joints, with factory label indicating four (4) or six (6) mil thickness.
- D. Six (6) mil polyethylene disposable bags shall have pre-printed OSHA/EPA/DOT labels and shall be transparent.
- E. Tape (or equivalent) capable of sealing joints in adjacent polyethylene sheets and for the attachment of polyethylene sheets to finished or unfinished surfaces must be capable of adhering under both dry and wet conditions.
- F. The cleaning agent detergent shall be lead specific, such as Tri-Sodium Phosphate (TSP).
- G. Any chemical stripper and chemical neutralizer to be utilized shall be compatible with the substrate as well as with each other.
- H. Labels and warning signs shall conform to OSHA 29 CFR 1926.62, USEPA 40 CFR 260 through 274 and USDOT 49 CFR 172 as appropriate.
- I. Any planting, bracing, shoring, barricades and/or temporary sheet piling, necessary to appropriately perform work activities shall conform to all applicable federal, state and local regulations.
- J. Air filtration devices and vacuum units shall be equipped with HEPA filters.

## 2.02 TOOLS AND EQUIPMENT

- A. The Contractor shall provide tools and equipment that are suitable for lead paint related activity:
1. Air monitoring equipment of the type and quantity required to monitor operations and conduct personnel exposure surveillance in accordance with OSHA requirements.
  2. Electrical equipment, protective devices and power cables shall conform to all applicable codes.
  3. Where lead exposures are above the OSHA Action Level or PEL, the Contractor shall provide wash facilities/shower stalls and plumbing that include sufficient hose length and drain system or an acceptable alternate. One shower stall shall be provided for each eight (8) workers.
  4. Where lead exposures are above the OSHA PEL, the Contractor shall provide exhaust air filtration units that are equipped with HEPA filters to provide local exhaust ventilation at the work area to reduce airborne lead emissions.
  5. The Contractor shall provide vacuum units of suitable size and capabilities for the project which have HEPA filters capable of trapping and retaining at least 99.97 percent of all monodispersed particles of three micrometers in diameter or larger.
  6. The Contractor shall provide ladders and/or scaffolds of adequate length, strength and sufficient quantity to support the work schedule. Scaffolds shall be equipped with safety rails and kick boards in compliance with OSHA requirements.
  7. Protective clothing, respirators, and HEPA P100 filter cartridges shall be provided in sufficient quantities for the project.
  8. Equipment suitable for building renovation/demolition and proper waste/debris collection/packing/removal, (e.g. excavators, grapples, backhoes, roll-offs, etc.) shall be provided by the Contractor as required.

## PART 3 - EXECUTION

### 3.01 GENERAL REQUIREMENTS

- A. All employees of the Contractor who perform work impacting lead paint shall be properly trained to perform such duties.
- B. All labor, materials, tools, equipment, services, testing, insurance (with specific coverage for work on asbestos), and incidentals which are necessary or required to perform the work in accordance with applicable governmental regulations, industry standards and codes, and these Specifications shall be provided by the Contractor.
- C. Prior to beginning work, the Engineer and Contractor shall perform a visual survey of each work area and review conditions at the site for safety reasons. In addition, the Contractor shall instruct all workers in all aspects of personnel protection, work procedures, emergency evacuation procedures and use of equipment including procedures unique to this project.

- D. The Contractor shall:
1. Shutdown and/or isolate heating, cooling, and ventilating air systems to prevent contamination and particulate dispersal to the other areas of the building.
  2. Shut down and lock-out/tag-out electrical power, including all receptacles and light fixtures, when feasible. The use or isolation of electrical power will be coordinated with all other ongoing uses of electrical power at the site.
  3. Coordinate all power and fire alarm isolation with the appropriate representatives.
  4. When necessary, provide temporary power and adequate lighting and ensure safe installation of electrical equipment, including ground fault protection and power cables, in compliance with applicable electrical codes and OSHA requirements. The Contractor is responsible for proper connection and installation of electrical wiring.
- E. Ladders and/or scaffolds to be utilized throughout this project shall be in compliance with OSHA requirements, and of adequate length, strength and sufficient quantity to support the scope of work. Use of ladders/scaffolds shall be in conformance with OSHA 29 CFR 1926 Subpart L and X requirements.
- F. Work performed at heights exceeding six feet (6') shall be performed in accordance with the OSHA Fall Protection Standard 29 CFR 1926 Subpart M including the use of fall arrest systems as applicable.
- G. Electrical service may not be available at the site. Costs for supplying electrical service shall be the responsibility of the Contractor.
- H. Water service may not be available at the site. The Contractor shall supply sufficient water for each shift to operate the wash facility/decontamination shower units in addition to the water needed at the work area.
- I. Data for random lead testing conducted on surfaces throughout the buildings as well as hazardous waste characterization results are available from the Engineer for informational purposes only and located as an attachment to this specification. Under no circumstances shall this information be the sole means used by the Contractor for determining the extent of lead painted materials. The Contractor shall be responsible for verification of all field conditions affecting performance of the work as described in these Specifications in accordance with OSHA, USEPA, USDOT and CT DEEP standards. Compliance with the applicable requirements is solely the responsibility of the Contractor.
- J. Activity impacting lead painted surfaces shall be performed in a manner which minimizes the spread of lead dust contamination and generation of airborne lead.
- K. The Engineer will provide a Project Monitor to oversee the activities of the Contractor. No activity impacting lead paint shall be performed until the Project Monitor is on-site. Environmental sampling, including ambient air sampling, TCLP waste stream

sampling and/or dust wipe sampling, shall be conducted throughout the project as deemed necessary.

### 3.02 ESTABLISHMENT OF REGULATED WORK AREAS

The Contractor shall prepare a Regulated Area as follows:

- A. In all areas where airborne exposures may exceed the OSHA PEL, post warning signs meeting the requirements of OSHA 29 CFR 1926.62 at each regulated area.
- B. In addition, signs shall be posted at all approaches to regulated areas so that an employee may read the sign and take the necessary protective steps before entering the area. These signs shall read:

**WARNING**

**LEAD WORK AREA**

**POISON**

**NO SMOKING OR EATING**

- C. Establish a Regulated Area, through the use of appropriate barrier tape, etc. and control unauthorized access into the area throughout the lead paint related activity.
- D. Implement appropriate engineering controls such as critical barriers, poly drop cloths, negative pressure, local exhaust ventilation, wet dust suppression methods, etc. to prevent the spread of lead contamination from the Regulated Area.
- E. For exterior work areas, the Contractor shall use a High Efficiency Particulate Air (HEPA) filtered vacuum dust collection system to remove any visible existing paint chips from the ground to a distance of 20' out from the base of the exterior surface scheduled for lead paint activity prior to commencement of work and extend a 6 mil polyethylene sheet drop cloth on the ground adjacent to the exterior surface scheduled for lead paint activity to contain debris/contamination.

### 3.03 WORKER DECONTAMINATION AREAS

- A. The Contractor shall provide hand-wash facilities in compliance with 29 CFR 1926.51(f) and 29 CFR 1926.62 regardless of airborne lead exposure. This wash facility will consist, at least, of potable water, towels, soap, and a HEPA vacuum.
- B. If air monitoring data by the Contractor or Project Monitor shows that employee exposure to airborne lead exceeds the OSHA PEL ( $50 \mu\text{g}/\text{m}^3$ ), shower rooms must be utilized. The Shower Room shall be of sufficient capacity to accommodate the number of workers. One shower stall shall be provided for each eight (8) workers. Showers shall be equipped with hot and cold or warm running water through the use of electric hot water heaters supplied by the Contractor. Shower water shall be collected and filtered using best available technology and dumped down an approved sanitary drain. Shower stalls and plumbing shall include sufficient hose length and drain system or an acceptable alternate.

### 3.04 PERSONNEL PROTECTION

- A. Exposure Assessments: The Contractor shall initially determine if any employee performing construction tasks impacting lead paint may be exposed to lead at or above the OSHA Action Level of 30 micrograms per cubic meter (30  $\mu\text{g}/\text{m}^3$ ). Assessments shall be based on initial air monitoring results as well as other relevant information. The Contractor may rely on historical air monitoring data obtained within the past 12 months under workplace conditions closely resembling the process, type of material, control methods, work practices and environmental conditions used and prevailing in the Contractors current operations to satisfy the exposure assessment requirements. Monitoring shall continue as specified in the OSHA standard until a negative exposure assessment is developed.'
- B. Until a negative exposure assessment is developed for the required tasks impacting lead paint, the Contractor shall ensure that all workers and authorized person entering the Regulated Area wear protective clothing and respirators in accordance with OSHA 29 CFR 1926.62. Protective clothing shall include impervious coveralls with elastic wrists and ankles, head covering, gloves and foot coverings. Sufficient quantities shall be provided to last throughout the duration of the project.
- C. Protective clothing provided by the Contractor and used during chemical removal operations shall be impervious to caustic materials. Gloves provided by the Contractor and used during chemical removal shall be of neoprene composition with glove extenders.
- D. Respiratory protective equipment shall be provided, and selection shall conform to 30 CFR Part 11, 29 CFR Part 1910.134, and 29 CFR Part 1926.62. A formal respiratory protection program must be implemented in accordance with 29 CFR Part 1926.62 and Part 1910.134.

### 3.05 LEAD PAINT ACTIVITY PROCEDURES

- A. Ensure that the Competent Person is on the job at all times.
- B. Do not begin abatement work until authorized by the Engineer, following a pre-abatement visual inspection by the Project Monitor.
- C. The Contractor shall ensure proper entry and exit procedures for workers and authorized persons who enter and leave the Regulated Area. All workers and authorized persons shall leave the Regulated Area and proceed directly to the wash or shower facilities where they will HEPA vacuum gross debris from work suit, remove and dispose of work suit, wash and dry face and hands, and vacuum clothes. Do not remove lead chips or dust by blowing or shaking of clothing. Wash water, shall be collected, filtered, and disposed of in accordance with federal, state and local water discharge standards.
- D. No one shall eat, drink, smoke, chew gum or tobacco, or apply cosmetics while in the Regulated Area.

- E. Utilize appropriate engineering controls (e.g. wet methods) as directed by 29 CFR 1926.62 to control lead emissions and contamination.
- F. Properly contain wastes containing lead paint for appropriate transport/disposal.
- G. Stop all work in the regulated area and take steps to decontaminate non-work areas and eliminate causes of such contamination should lead contamination be discovered in areas outside of the regulated area.
- H. Special Requirements:
  - 1. Demolition/Renovation:
    - a. Demolish/renovate in a manner which minimizes the spread of lead contamination and generation of lead dust.
    - b. Implement dust suppression controls, such as misters, local exhausts ventilation, etc. to minimize the generation of airborne lead dust.
    - c. Segregate work areas from non-work areas through the use of barrier tape, poly-critical, etc.
    - d. Clean up immediately after renovation/demolition has been completed
  - 2. Chemical Removal:
    - a. Apply chemical stripper in quantities and for durations specified by manufacturer.
    - b. Scrape lead paint from surface down to bare substrate with no trace of residual pigment. Use sanding, hand scraping, and dental picks to supplement chemical methods as required to remove residual pigment.
    - c. Apply neutralizer compatible with substrate and chemical agent to substrate following removal in accordance with manufacturer's instructions.
    - d. Protect adjacent surfaces from damage from chemical removal.
    - e. Maintain a portable eyewash station in the work area.
    - f. Wear respirators that will protect workers from chemical vapors.
    - g. Do not apply caustic agents to aluminum surfaces.
  - 3. Paint Stabilization/Liquid Encapsulation:
    - a. Remove surface dust, dirt, mildew, scale, rust or other debris by scrubbing with detergent (lead-specific detergent solution) and rinsing. Remove loose paint using wet scraping methods until a sound surface is achieved. Remove unsound substrate not firmly adhered and repair with an appropriate patching material.
    - b. Remove and reinstall or protect electrical receptacles, hardware, and wall mounted objects from being painted-over by encapsulant. Protect adjacent finishes from paint splatter or other damage.
    - c. Apply encapsulant in a continuous coat. Number of coats is as specified in the manufacturer's instructions for application. Encapsulant shall be approved by the CTDPH for use. Use encapsulants only on substrates and locations approved for use in the manufacturer's instructions.
    - d. Do not use new coats of paint or primer, wall paper cover and contact paper as encapsulants.
    - e. Do not apply encapsulants to friction or impact surfaces.



- f. Prior to application of encapsulants, perform the tape, X-cut tape and patch tests in accordance with the CTDPH guidance document information on Applying Liquid Encapsulants to Interior Surfaces for Property Owners and Lead Professionals to determine if the surface is suitable for encapsulation.
4. Mechanical Paint Removal:
    - a. Provide sanders, grinders, rotary wire brushes, or needle gun removers equipped with a HEPA filtered vacuum dust collection system. Cooling on the dust collection system for orbital-type tools must be capable of maintaining a continuous tight seal with the surface being abated. Cowling on the dust collection system for reciprocating-type tools shall promote an effective vacuum flow of loosened dust and debris. Inflexible cowlings may be used on flat surfaces only. Flexible contoured cowlings are required for curved or irregular surfaces.
    - b. Provide HEPA vacuums that are high performance designed to provide maximum static lift and maximum vacuum system flow at the actual operating vacuum condition with the shroud in use. The HEPA vacuum shall be equipped with a pivoting vacuum head.
    - c. Remove all lead paint from surface down to bare substrate with no trace of residual pigment. Use chemical methods, hand scraping, and dental picks to supplement abrasive removal methods as required to remove residual pigment.
    - d. Protect adjacent surfaces from damage from abrasive removal techniques.
    - e. "Sandblasting" type removal techniques should be performed within full containment negative pressure enclosures.
  5. Component Removal/Replacement:
    - a. Wet down components which are to be removed to reduce the amount of dust generated during the removal process.
    - b. Remove components utilizing hand tools, and follow appropriate safety procedures during removal. Remove the building components by approved methods which will provide the least disturbance to the substrate material. Do not damage adjacent surfaces.
    - c. Clean up immediately after component removals have been completed. Remove any dust located behind the component removed.

### 3.06 PROHIBITED REMOVAL METHODS

- A. The use of heat guns in excess of 700 degrees Fahrenheit to remove lead paint is prohibited.
- B. The use of sand, steel grit, water, air, COC, baking soda, or any other blasting media to remove lead or lead paint without the use of a HEPA ventilated contained negative pressure enclosure is prohibited.
- C. Power tool assisted grinding, sanding, cutting, or wire brushing of lead paint without the use of "cowled" HEPA vacuum dust collection systems is prohibited.

- D. Lead paint burning, busting of rivets painted with lead paint, welding of materials painted with lead paint, and torch cutting of materials painted with lead paint is prohibited. Where cutting, welding, busting, or torch cutting of materials is required, pre-remove the lead paint in the area affected.
- E. Use of chemical strippers containing Methylene Chloride is prohibited.
- F. Compressed air shall not be utilized to remove lead paint.

### 3.07 AIR MONITORING REQUIREMENTS

- A. The Contractor shall:
  - 1. Provide air monitoring equipment including sample filter cassettes of the type and quantity required to properly monitor operations and personnel exposure surveillance throughout the duration of the project.
  - 2. Conduct initial exposure monitoring to determine if any employee performing construction tasks impacting lead paint may be exposed to lead at or above the OSHA Action Level of 30 micrograms per cubic meter. Monitoring shall continue as specified in the OSHA standard until a negative exposure assessment is developed.
  - 3. Conduct personnel exposure assessment air sampling, as necessary, to assure that workers are using appropriate respiratory protection in accordance with OSHA Standard 1926.62. Documentation of air sampling results must be recorded at the work site within twenty-four (24) hours and shall be available for review until the job is complete.
- B. The Project Monitor will:
  - 1. Collect air samples in accordance with the current revision of the NIOSH 7082 or 7702 Method of Air Sampling for Airborne Lead while overseeing the activities of the Contractor. Frequency and duration of the air sampling during abatement will be representative of the actual conditions at the site. The size and configuration of the project will be a factor in the number of samples required to monitor the activities and shall be determined by the Project Monitor.
- C. As determined by AAS, XRF, or equivalent analysis, if air samples collected outside of the Regulated Area during abatement activities indicate airborne lead concentrations greater than original background levels or greater than 30  $\mu\text{g}/\text{m}^3$ , whichever is larger, an examination of the Regulated Area perimeter shall be conducted, and the integrity of barriers shall be restored. Cleanup of surfaces outside the Regulated Area using HEPA vacuum equipment or wet cleaning techniques shall be done prior to resuming abatement activities.
- D. Abatement outside the initial designated work area(s) will not be paid. The Contractor will be responsible for all costs incurred from these abatement activities.

### 3.08 CLEAN-UP AND VISUAL INSPECTION

- A. Remove and containerize all lead waste material and visible accumulations of debris, paint chips and associated items.
- B. During clean up the Contractor shall utilize rags and sponges wetted with lead-specific detergent and water as well as HEPA filtered vacuum equipment.
- C. The Engineer will conduct a visual inspection of the work areas in order to document that all surfaces have been maintained as free as practicable of accumulations of lead in accordance with OSHA 29 CFR 1926.62(h). If visible accumulations of waste, debris, lead paint chips or dust are found in the work area, the Contractor shall repeat the cleaning, at the Contractor's expense, until the area is in compliance. The visual inspection will detect incomplete work, damage caused by the abatement activity, and inadequate clean-up of the work site.
- D. Dust wipe clearance testing, in accordance with CTDPH/USEPA/HUD protocols, will also be performed by the Engineer if so detailed in the Scope of Work; Construction Methods — Lead Abatement Provisions — Lead Abatement Procedures. If lead dust wipe levels are above CTDPH/EPA/HUD clearance criteria, the Contractor shall re-clean the work area and detesting shall be conducted at the Contractors expense. The testing and cleaning sequence shall be repeated until the clearance criteria levels have been achieved.

### 3.09 POST-ABATEMENT WORK AREA DEREGULATION

- A. Following the visual inspection, (and clearance testing if appropriate,) any engineering controls implemented may be removed and the Work Area deregulated.
- B. A final visual inspection of the work area shall be conducted by the Competent Person and the Project Monitor to ensure that all visible accumulations of suspect materials have been removed and that no equipment or materials associated with the abatement project remain.
- C. The Contractor shall restore all work areas and auxiliary areas utilized during work to conditions equal to or better than original. Any damage caused during the performance of the work activity shall be repaired by the Contractor at no additional expense to the Engineer'.

### 3.10 NON-HAZARDOUS WASTE DISPOSAL/RECYCLING

- A. Non-metallic building debris waste materials tested and found to be non-hazardous Construction and Demolition (C&D) bulky waste shall be disposed of properly at a CTDEEP approved Solid Waste landfill.

- B. Metallic debris shall be segregated and recycled as scrap metal at an approved metal recycling facility. The Contractor shall submit to the Engineer all documentation necessary to demonstrate the selected recycling facility is able to accept lead-painted scrap metal.
- C. Concrete, brick, etc. coated with any amount of lead paint cannot be crushed, recycled or buried on-site to minimize waste disposal. Only CTDEEP defined "clean fill" can be recycled on-site or sent to a recycling facility.

### 3.11 HAZARDOUS LEAD WASTE DISPOSAL

- A. If required to dispose of any hazardous waste, the Contractor shall utilize a certified/permitted transporter for hazardous waste in compliance with DOT 49 CFR Part 172 and USEPA 40 CFR 260-274 and a permitted hazardous waste treatment storage disposal facility (TSDF) in compliance with USEPA 40 CFR 260-274.
- B. Hazardous lead bearing material must be offered for transportation and transported in compliance with the Code of Federal Regulations, Title 49, Chapter 1, Part 173, Subparts A, B, C, and D and Paragraph 178.118. Transport vehicles (hopper or dump type) must be free from leaks and discharge openings must be securely closed during transportation. All storage containers (roll offs or drums) shall have a protective liner and removable lid. These containers shall not have any indentations or damage that would allow seepage of the contained material.
- C. The disposal of hazardous lead bearing material must be in compliance with the requirements of, and authorized by, the Office of Solid Waste Management, Department of Energy and Environmental Protection, State of Connecticut, and the USEPA.
- D. The disposal of hazardous lead bearing waste shall comply with the requirements of the Resource Conservation and Recovery Act (RCRA).
- E. Unless previous waste characterizations have been completed by the Engineer, all generated waste shall be containerized and stored on-site for hazardous waste determination via TCLP testing. TCLP testing and analysis shall be the responsibility of the Engineer.
- F. The Contractor shall collect the wash water generated by the worker shower, wash facilities, or steam cleaning operations in fifty-five (55) gallon drums and filter the water using a two (2) stage filtration system composed of:
  - 1. 5-micron porosity in-line cartridge particulate filter followed by:
  - 2. Activated carbon filter in-line cartridge

Hold the filtered water for testing by the Engineer prior to discharge to the sanitary sewer.

- G. The dumpsters/containers containing hazardous waste are to be kept covered and locked when not in active use for the loading of materials.
- H. All containers of hazardous lead bearing material shall be labeled in accordance with 29 CFR 1926.62 and EPA 40 CFR 260-270.
- I. All hazardous lead-bearing waste removed from the site by the Contractor shall be containerized in lined roll-offs or barrels. Store waste materials in U.S. Department of Transportation (49 CFR 178) approved containers. Properly label and placard each container to identify the type of waste (49 CFR 172) and the date the container was filled. The disposal containers shall be labeled with a six-inch square, yellow, weatherproof, hazardous waste sticker in accordance with U.S. DOT regulations, by the Contractor.
- J. The Contractor may not store containerized hazardous lead waste on the job site for in excess of 90 calendar days from the accumulation start date.
- K. When required to dispose of hazardous waste, the Contractor shall utilize a certified/permitted transporter for hazardous waste in compliance with USDOT 49 CFR Part 172 and USEPA 40 CFR 260-274 and a permitted hazardous waste treatment storage disposal facility (TSDF) in compliance with USEPA 40 CFR 260-274.
- L. The Contractor shall complete a Uniform Hazardous Waste Manifest, EPA Form 8700-22, and submit to the Engineer for review and generator sign-off prior to each load of hazardous waste scheduled to leave the site. Completed copies of the manifest shall be delivered by the Contractor to the Engineer within (Thirty) 30 calendar days following the date the load leaves the site.
- M. When all necessary procedures have been completed, then the hazardous waste shall be shipped to the hazardous waste disposal facility.
- N. Any spillage of debris during disposal operation, i.e., loading, transport and unloading, shall be cleaned up in accordance with the Code of Federal Regulations, Title 40, Chapter 1, Part 25, Subparts C and D, at the Contractor's expense.
- O. The Contractor is liable for any fines, costs or remediation costs incurred as a result of the failure to be in compliance with this special provision and all federal, state and local laws.
- P. Final payment requisitions for the contract will not be processed until a signed copy of the manifest from the treatment or disposal facility certifying the amount of lead-containing materials delivered is returned and a copy is furnished to the Engineer.

**END OF SECTION**

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## PART 1 - GENERAL

### 1.01 RELATED DOCUMENTS

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

### 1.02 DEFINITIONS

- A. The following definitions shall be applicable to this Section:
1. United States Environmental Protection Agency (EPA): Agency responsible for implementing PCBs Manufacturing, Processing, Distribution in Commerce, And Use Prohibition, 40 CFR 761 ("TSCA") regulations.
  2. PCB Abatement Contractor ("Contractor"): The contractor performing the PCB abatement work as outlined by this Section.
  3. Excluded PCB Product: Building materials found to contain < 50 ppm PCB and not impacted by a PCB Bulk Product Waste as defined in 40 CFR 761.3. For the purposes of this project, Excluded PCB Product shall include caulking/glazing that will be managed as PCBs in concentrations in excess of 50 mg/Kg.
  4. Consultant: Responsible for overseeing PCB abatement work and for performing and evaluating verification sample data on behalf of the Owner. The Consultant shall be represented daily onsite as the Project Monitor.

### 1.03 SUBMITTALS

- A. Prior to the start of work included in this Section, prepare and submit the following items. Do not commence work activities until the submittals are approved.
1. Site-specific Health and Safety Plan (HASP): Developed in accordance with Occupational Safety and Health Administration (OSHA) regulations and any other applicable federal, state, or local regulations.
  2. Licenses and Permits: Licenses and permits required for complying with any applicable federal, state and local laws, codes, policies and regulations in connection with the work or waste disposal outlined in this Section at least 5 business days prior to the start of the work outlined in this Section.
  3. Schedule: Provide a work schedule at least 15 business days prior to the start of work.
  4. At least seven (7) days prior to performing any abatement work that shall generate PCB wastes, the Contractor shall submit copies of the State-approved permits for the proposed disposal facility and a waste profile approved by the proposed disposal facility indicating that the waste materials to be generated are acceptable to the facility.
  5. No abatement shall commence until a copy of all required submittals have been received and found acceptable to the Owner's Representative and the Consultant.

- B. At completion of the work included in this Section, prepare and submit the following items.
1. Waste Profiles: All waste profiles, applications and questionnaires, prior to forwarding them to the party requiring these documents at least 5 business days prior to removal of waste materials generated by the work of this Section.
  2. Shipping Papers: Any manifests or other documents required to transport and dispose of the items identified in this Section. The Contractor shall not transport or dispose of any materials until authorized by the Owner's Representative. Completed copies of all manifests and other applicable documents and certified scale weight receipts, as applicable, must be furnished to the Owner's Representative and Consultant as part of the Report.
  3. Work Method Changes: Significant changes to the means and methods that conflict with this Section require a written request to the Owner's Representative for review and approval at least 15 days prior to making change.
  4. PCB Completion Report: Within forty-five (45) days after completion of the work covered under this Section, the Contractor shall submit a PCB Completion Report that summarizes and documents the removal and disposal of all materials associated with activities outlined in this Section. The report shall be a prerequisite for final payment for work covered under this Section. At a minimum the report shall include the name of the disposal facility, a summary of materials disposed and a copy of the manifest, Certificates of Disposal and other applicable documentation.

#### 1.05 QUALITY ASSURANCE

- A. Remove Excluded PCB Product prior to renovation and/or demolition activities. Excluded PCB Product shall be abated from surrounding porous surfaces (i.e., concrete and brick) and non-porous surfaces (i.e., glass and metal).
- B. The Consultant will visually inspect areas of Excluded PCB Product abatement to confirm adequate removal prior to renovation, demolition and disposal. The Owner's Representative Right to conduct inspections does not relieve the Contractor of this responsibility. Neither the Owner's Representative, nor their authorized representatives' failure to make such inspection, nor failure to discover nonconforming services, will impose any liability on the Owner's Representative or their authorized representatives, nor shall it prejudice the rights of the Owner's Representative thereafter to reject services, and shall not relieve the Contractor of its obligation to perform work strictly in accordance with the contract and applicable local, state and federal regulations.

#### 1.06 WORK INCLUDED

- A. The intent of this Section is to identify for the Contractor where PCB have been confirmed to exist and the applicable regulatory responsibilities the Contractor shall comply with in order to perform the renovation and demolition work and remediation of contaminated building materials. Health and safety concerns,



disposal requirements, worker training and demolition procedures are described in this Section.

- B. Sealant materials in the form of caulking/glazing are located on the skylight windows located on Roof Area C (SEE ATTACHED DRAWING A105) with PCB concentrations greater than 50 parts per million (ppm), thereby classifying this material as an Excluded PCB Product.
- C. In general, the following activities are minimum requirements of this Section and affect the demolition performed on building components containing PCB:
  - 1. All field activities, material removal and material disposal shall be performed in general accordance with applicable 40 CFR 761 Regulations.
  - 2. No torch cutting, mechanical sanding or stripping, or abrasive methods of removal of Excluded PCB Product shall be performed.
  - 3. No demolition activities shall occur that can reasonably be expected to increase the worker's exposure above the Permissible Exposure Limit (PEL) for PCBs unless certain worker protection is implemented.
  - 4. Workers shall be informed of the PCB building components to be removed.
  - 5. At a minimum, worker protection shall comply with applicable OSHA standards. Worker Right to Know and Health and Safety Standards included in 29 CFR Part 1926 shall also apply to the work of this Section.
  - 6. Unprotected, untrained workers or trades shall not perform any related work within or adjacent to work areas involving Excluded PCB Product.

#### 1.07 RELATED WORK

- A. Materials to be managed in accordance with this specification may also contain asbestos and/or lead. The requirements for managing these contaminants as specified in other technical specification sections must be followed in addition to those presented here.
  - 1. This specifically applies to health and safety, work zone containment, work zone posting and waste storage, shipping papers, transportation and disposal.
  - 2. When there is a conflict, the most stringent requirements shall apply.
  - 3. When there is a conflict regarding surface preparation (e.g. etching, drilling, cutting, sanding, washing or other activities that will generate dust or building debris) and waste management, the requirements of this Section shall prevail.

#### 1.08 GENERAL REQUIREMENTS

- A. Examine all conditions as they exist at the project prior to submitting a bid for the work of this Section. PCBs are present in select caulking/glazing and at levels greater than or equal to 50 ppm (mg/Kg). The caulking/glazing sealants are classified as Excluded PCB Products, in accordance with the Toxic Substance Control Act (TSCA) pursuant to Federal regulation 40 CFR 761.
- B. This Section establishes requirements for the removal, segregation, management, and disposal of Excluded PCB Products primarily in the form of sealants (glazing).

- C. Excluded PCB Products shall be removed and disposed of as Connecticut Regulated Waste.
- D. PCB removal, segregation, management, and disposal work referenced herein shall be performed in accordance with a Health and Safety Plan (HASP) developed by the Contractor in accordance with Occupational Safety and Health Administration (OSHA) regulations, and any other applicable federal, state, or local regulations. All workers who will wear respirators must have Respiratory Protection training accordance with 29 CFR 1910.134. Workers handling Excluded PCB Product on-site will be 40-hour HAZWOPER trained, or Consultant approved equivalent. Nothing in this Section shall be deemed to relieve the General Contractor and the PCB Abatement Contractor, or other approved properly trained contractor, from any liability with respect to any such legal requirements or requirement of prudent conservative practice.
- E. All equipment and tools shall be provided to the Site free of contamination. The Consultant retains express authority to prohibit from the Site any equipment that in his/her opinion has not been thoroughly decontaminated prior to arriving at the Site. Any decontamination of the Contractor's equipment prior to arrival at the Site shall be at the expense of the Contractor. The Contractor is prohibited from decontaminating equipment on the Site which is not thoroughly decontaminated upon arrival.
- F. The work area will be demarcated with caution tape and signage at a distance to keep unauthorized workers and visitors out of the work area. A tool drop zone and personal decontamination facility will be established contiguous to the work zone. A clean zone will be established along with waste stream pathways.
- G. Excluded PCB Products shall be abated from surrounding porous surfaces (i.e., concrete and brick).
- H. The Contractor shall provide all drums, storage containers and related products and materials required for collecting, storing, and transporting the PCB-containing waste in compliance with CTDEEP, U.S. EPA, and U.S. Department of Transportation (DOT) requirements. All drums shall meet the requirements of DOT 49 CFR 173.
- I. The Consultant will render certain technical services during the Work, including without limitation, the services described within this Section. All services performed by the Consultant shall be considered advisory to, and for the sole and exclusive benefit of the Owner's Representative. The Contractor acknowledges that the Consultant is an independent contractor of the Owner's Representative and agrees that no act or omission by such Consultant, and no communication by said Consultant, shall be deemed in any manner to alter or modify the terms of this Contract, or to waive any provision hereof, or to bind the Owner's Representative, unless specifically agreed upon by Owner's Representative in a signed written instrument.

#### 1.09 REGULATORY REQUIREMENTS

- A. The work of this Section shall be performed in accordance with applicable federal, state, and local regulations, laws, codes, and ordinances, including EPA requirements, governing the removal, handling, transportation, and disposal of materials managed under this Section.
- B. Contractor is solely responsible for obtaining all federal, state, and local permits or approvals which may be required to perform the work of this Section, including all costs, fees and taxes required or levied. Contractor shall adhere to all permit/approval requirements.
- C. Contractor shall comply with all applicable federal, state, and local environmental, safety and health requirements regarding the demolition of structures or other Site features and recycling or disposal of demolition debris, as applicable.
- D. The Contractor shall document that the disposal facility(ies) proposed have all certifications and permits as required by federal, state and local regulatory agencies to receive and dispose of the materials managed under this Section. Note that some materials to be managed may contain PCBs (at concentrations less than 50 ppm), asbestos and/or lead.
- E. The following regulations are cited for information and guidance. The list below is not all-inclusive. The Contractor shall be responsible for a thorough knowledge and full implementation of all requirements for removal, transportation, and disposal of the materials managed under this Section.
  - 1. PCBs Manufacturing, Processing, Distribution in Commerce, And Use Prohibition, 40 CFR 761 ("TSCA").
  - 2. Hazardous Waste Operations and Emergency Response, Federal Occupational Safety and Health Act (OSHA), 29 CFR 1910.120.
  - 3. Safety and Health Regulations for Construction, OSHA 29 CFR Part 1926.
  - 4. General Regulations for Hazardous Waste Management, EPA, 40 CFR 260.
  - 5. Regulations for Identifying Hazardous Waste, Hazardous Waste Generators and Hazardous Waste Transporters, EPA, 40 CFR 261, 262 and 263.
  - 6. Regulations for Owners and Operators of Permitted Hazardous Waste Facilities, EPA, 40 CFR 264.
  - 7. Interim Status Standards for Owners and Operators of Permitted Hazardous Waste Facilities, EPA. 40 CFR 265.
  - 8. Standards for Management of Specific Hazardous Wastes and Facilities, EPA, 40 CFR 266.
  - 9. Interim Standards for Owners and Operators of New Hazardous Waste Land Disposal Facilities, EPA, 40 CFR 267.
  - 10. Hazardous Materials Regulations Relating to Transportation, 49 CFR 171-180 – U.S. Department of Transportation (U.S. DOT).
  - 11. Regulations Relating to Transportation, 49 CFR Subtitle B Parts 100-185 – U.S. Department of Transportation (U.S. DOT).
  - 12. Publications, Practices for Respiratory Protection, z88.2-1992 - American National Standards Institute (ANSI).

13. Hazardous Waste Management, Section 22a-449(c)-100 through 22a-449(c)110 and 22a-449(c)-11, Connecticut Department of Environmental Protection.
  14. Solid Waste Management, Section 22a-209-1 through 22a-209-16, Connecticut Department of Environmental Protection.
- F. The following documents are cited for information and guidance. The list below is not all-inclusive. The Contractor shall be responsible for a thorough knowledge and full implementation of all requirements for removal, transportation, and disposal of the materials managed under this Section.
1. Contractors Handling PCBs in Caulk During Renovation; EPA, EPA-747-F-09-004.
  2. Preventing Exposures to PCBs in Caulking Material; EPA, EPA 747-F-09-005 (September 2009).

#### 1.10 SEQUENCE OF WORK

- A. Work shall be divided into convenient Work Areas, each of which is to be completed as a separate unit. The following sequence of work shall be used for the PCB abatement work:
1. Release of work area to the Contractor, to ensure no conflicts with occupancy.
  2. All temporary utilities required for the project shall be on site and operational prior to the initiation of abatement work.
  3. Abatement of all Excluded PCB Product by the Contractor.
  4. Visual inspection by the Consultant to verify satisfactory completion of Excluded PCB Product removal.

#### 1.11 DELIVERY, STORAGE AND HANDLING

- A. Deliver all materials in the original packages, containers, or bundles bearing the name of the manufacturer and the brand name and product technical description. Do not use damaged or deteriorating materials. Material that becomes contaminated with PCB shall be decontaminated or disposed of as Excluded PCB Product.

#### 1.12 QUALITY ASSURANCE

- A. Remove PCB-containing materials prior to demolition and disposal of such areas (If required).
- B. If required, Consultant will visually inspect areas of PCB-containing material abatement to confirm adequate removal prior to demolition and disposal. The Owner's Representative Right to conduct inspections does not relieve PCB Abatement Subcontractor of this responsibility. Neither the Owner's Representative, nor their authorized representatives' failure to make such inspection, nor failure to discover nonconforming services, will impose any liability on the Owner's Representative or their authorized representatives, nor shall it prejudice the rights of the Owner's Representative thereafter to reject services, and shall not relieve PCB Abatement Subcontractor of its obligation to perform

work strictly in accordance with the contract and applicable local, state and federal regulations

### 1.13 PCB COORDINATION

- A. Extend full cooperation to the Owner's Representative and the Consultant in all matters involving the use of the Site. At no time shall the Contractor cause or allow to be caused conditions, which may cause risk or hazard to the general public, or conditions that might impair safe use of the Site.
- B. Coordinate the work of this Section with that of all other trades at the express consent of the Owner's Representative and Consultant. Phasing and scheduling of this project will be subject to the approval of the Owner's Representative and Consultant. The work of this Section shall be scheduled and performed so as not to impede the progress of the project as a whole. Work shall not proceed in any area without the express consent of the Owner's Representative and Consultant. The Contractor shall be available within 24-hours' notice for additional work if after acceptance of the work it is found that full abatement was not achieved from the initial work effort as determined by the Owner's Representative or Consultant.

## PART 2 - PRODUCTS

### 2.01 MATERIALS

- A. Contractor shall be responsible for providing all material and protective equipment required for performance of the work. Contractor shall comply with all local, state and federal regulations pertaining to the selection and use of materials and equipment on this project.
- B. Warning Signs and Labels – Work areas shall be properly demarcated and posted in accordance with OSHA and TSCA requirements. Labels and signs shall conform to EPA Standard 40 CFR 761.40, OSHA 26 CFR 1926, and DOT 49 CFR 172.
- C. Fire retardant polyethylene sheet in roll size to minimize the frequency of joints shall be delivered to job site with factory label indicating four (4) or six (6) mil.
- D. Tape shall be capable of sealing joints in adjacent polyethylene sheets and for attachment of polyethylene sheet to finish or unfinished surfaces. Tape must be capable of adhering under both dry and wet conditions.
- E. Containers must be impermeable and shall be both air and watertight. Containers shall be labeled in accordance with OSHA Standard 29 CFR 1926, EPA 40 CFR Part 761, and USDOT 49 CFR Part 172 as appropriate.

### 2.02 TOOLS AND EQUIPMENT

- A. Tools and equipment shall be suitable for removal of PCB-containing caulking.

- B. Protective clothing, respirators, filter cartridges, air filters and sample filter cassettes shall be provided in sufficient quantities for the project.
- C. Electrical equipment, protective devices and power cables shall conform to all applicable codes.
- D. Shower stalls and plumbing shall include sufficient hose length and drain system or an acceptable alternate. Showers shall be equipped with hot and cold or warm running water. One shower stall shall be provided for each eight workers.
- E. Vacuum units, of suitable size and capabilities for the project, shall have HEPA filters capable of trapping and retaining at least 99.97 percent of all monodispersed particles of 0.3 microns in diameter or larger.
- F. Ladders and/or scaffolds shall be of adequate length, strength and sufficient quantity to support the work schedule.
- G. Other materials such as lumber, nails and hardware necessary to construct and dismantle the decontamination enclosures and the barriers that isolate the Work Area shall be provided as appropriate for the work.

### PART 3 - EXECUTION

#### 3.01 SEQUENCING

- A. The following is a typical sequence of work that shall be adhered to by the Contractor during the PCB abatement project. Consultant may authorize deviations from this typical sequence based upon the specific conditions encountered during the project.
  - 1. Post all required signage. This is in addition to asbestos and lead-containing material related requirements.
  - 2. Establish and secure active work area and waste storage area from unauthorized access.
  - 3. Construct containment, decontamination units and any other construction needed to complete the work area to the satisfaction of Consultant.
  - 4. Consultant shall inspect and approve work area preparations before permitting Contractor to begin removal work.
  - 5. Contractor shall remove and dispose all Excluded PCB Product as required by this Section. This will include:
    - a. Excluded PCB Product sealant associated with skylights.
  - 6. Clean areas where Excluded PCB Product is removed.
  - 7. Manage Excluded PCB Product as Connecticut Regulated Waste.
  - 8. Consultant shall perform a final visual inspection to assure that no visible PCB-containing debris exists in the work area. Contractor shall re-clean the work areas as needed until they pass a visual and physical inspection by Consultant.
  - 9. Clean surfaces in contact with Excluded PCB Product.
  - 10. Manage all waste materials in accordance with this specification.

11. Remove all work area barriers, equipment, polyethylene sheeting, etc. and clean any areas to the satisfaction of Consultant and/or Owner's Representative.

### 3.02 ABATEMENT METHODS

- A. Demarcate the work area and post signage at a distance to keep unauthorized workers and the public out of the work area. A tool drop zone and personal decontamination area will be established contiguous to the work zone. A clean zone will be established along with waste stream pathways.
- B. Establish a decontamination area for workers to properly don and doff protective equipment and decontaminate when entering and leaving the work zone. Decontamination of personnel and equipment is required after performance of activities where PCB containing material is handled. The personnel decontamination area may be in the form of a mobile trailer or field station. Personnel decontamination shall, at a minimum, consist of: decontamination before breaks and each time workers exit the exclusion zone, and at the completion of each work day to prevent worker exposure and the spread of contaminants off Site.
- C. Inspect area for sealant debris. Excluded PCB Product sealant debris shall be gathered and managed as Connecticut Regulated Waste.
- D. Provide polyethylene drop cloths to capture any falling caulking and glazing materials. The drop cloths will be placed beneath each active Excluded PCB Product removal area. Additional polyethylene sheeting will be used as required to capture Excluded PCB Product debris from the sides of the work areas should the drop fail to capture all falling debris. The drop cloth shall be inspected at least daily when area is being actively worked and all materials captured shall be removed and placed in appropriate waste storage container.
- E. All openings into the building shall be sealed on the building interior with polyethylene sheeting and duct tape to isolate the work area from the building interior.
- F. Do not proceed with sealant removal if drop cloths are capable of becoming airborne due to high winds.
- G. Satisfactorily wet all caulking/glazing being remediated in accordance with NESHAP requirements. Wetting shall be limited so as to the amount required to control dust and shall not lead to the free flow of water from the work area. Sorbent pads shall be used to contain any excess water. All debris shall be properly collected and disposed of as Connecticut Regulated waste, and in accordance with applicable regulations.
- H. Following abatement of PCB-containing caulk/glazing material, surfaces shall be cleaned by wet brushing (using a nylon brush), wet wiping and sponging or cleaning by an equivalent method to remove all visible material (wire brushes are not permitted). Cleaning shall include the use of HEPA filtered vacuum equipment.

- I. All PCB containing materials shall be removed and properly containerized for disposal. No remediated material shall be allowed to be stockpiled on the ground. All remediated material must be properly containerized and placed in a designated storage area on-site that is secured and properly labeled.
- J. No mechanical grinding or wire wheels will be used to remove Excluded PCB Product. Utilize hand tools as required to fully remove materials. Chipping with power tools will only occur after it is determined that work cannot be satisfactorily completed with hand tools. When these power tools are used, they shall be equipped with HEPA vacuum systems or other measures to control and contain dust.
- K. After Excluded PCB Product is removed, surrounds, frames, glass etc. and work area will be vacuumed with a HEPA filter equipped vacuum and then the surrounds, frames, glass, etc. double wiped with a suitable solvent (e.g. hexane) wetted rag.
- L. Final cleaning by the Contractor shall include removal of all contaminated material, equipment or debris (including containment materials) from the work area and removal of all visible dusts located on surface.
- M. Upon completion of the work, the Consultant shall perform a visual inspection to ensure all materials have been properly removed as per this Section.

### 3.03 WASTE MANAGEMENT

- A. All costs associated with proper disposal of Excluded PCB Product as Connecticut Regulated Waste shall be borne by the Contractor. All materials shall be disposed of in accordance with all laws, and the provisions of this Section and any or all other applicable federal, state, county or local regulations and guidelines.
- B. The Contractor shall ensure that PCB-containing waste is appropriately sized for acceptance at the waste disposal facility. No mechanical grinding, wire wheels or other dust generating power tools will be used to demolish PCB-containing debris to obtain the appropriate size(s). Building demolition will be completed after the Excluded PCB Product materials are removed from the building. Use of mechanical grinding, wire wheels or other dust generating power tools can be used on non-PCB containing members, which have not been in direct contact with PCBs.
- C. The types of waste that will be generated include:
  - 1. PPE and containment materials.
    - a. This material can be managed as Connecticut Regulated Waste.
  - 2. Decontamination water.
    - a. Decontamination water shall be disposed of by filtration and discharge in to a sanitary drain.
  - 3. Excluded PCB Product.



- a. This material may be managed as Connecticut Regulated Waste by any permitted waste management or recycling facility as long as they are made aware of PCB levels in the materials they are to receive, and their permit allows them to accept these types of materials.
- D. Non-PCB containing materials shall be segregated from PCB containing materials.
- E. All tools and equipment that cannot be decontaminated with a double wipe with a solvent wetted rag in accordance with 40 CFR 761.79(c)2 shall be managed in accordance with the waste category they were used for.
- F. Manifests
  1. Each manifest shall note the truck registration number, state of registration, name of driver, and date of removal of material from the Site.
  2. The Owner will be designated as generator and the Owner's Representative will sign all manifests and waste profile applications or questionnaires.
  3. As appropriate, Manifests shall address the fact that some materials contain PCB, asbestos and lead.

*NOTE: A LEAD TCLP OF THE WINDOWS WILL NEED TO BE PERFORMED PRIOR TO DISPOSAL TO DETERMINE IF THE WINDOWS NEED TO BE CHARACTERIZED AS LEAD HAZARDOUS PCB/ACM WASTE OR NON-LEAD HAZARDOUS PCB/ACM WASTE.*

### 3.04 TRANSPORT OF CONTAMINATED MATERIAL

- A. No contaminated materials shall be transported off-site until all disposal or recycling facility documentation has been received, reviewed, and accepted by the Owner's Representative. Such documentation shall be submitted to the Owner's Representative and Consultant
- B. All hauler(s) shall be licensed in all states affected by transport.
- C. The Contractor shall be responsible for inspecting the access routes for road conditions, overhead clearance, and weight restrictions, and shall provide traffic control when needed.
- D. The Contractor shall be responsible for any and all actions and costs necessary to remedy situations involving material spilled in transit or mud and dust tracked off-Site. This cleanup and other ancillary activities shall be accomplished at the Contractor expense.
- E. Trucks and containers shall be covered during transport as required by applicable law.

### 3.05 SPILL RESPONSIBILITY

- A. The Contractor is solely responsible for any and all spills or leaks during the performance of work under this contract, which occur as a result of or are

contributed to by the actions of its agents, employees or subcontractors. Such spills or leaks shall be cleaned to the satisfaction of the Owner or its representative, and in a manner that complies with applicable federal, state and local laws, codes, policies and regulations. The spill cleanup shall be at no cost to the Owner.

- B. The Contractor shall report all such spills or leaks, regardless of their quantity, to the Owner's Representative immediately upon discovery. A written follow-up report shall be submitted to the Owner's Representative as soon as possible, but not later than 24 hours after the initial telephone report. The written report shall be in narrative form and, at a minimum, include the following:
1. Description of item spilled (including identity, quantity, manifest number, etc.).
  2. Exact time and location of spill, including a description of the area involved.
  3. Containment procedures initiated.
  4. Description of cleanup procedures employed or to be employed at the Site, including location of disposal of spill residues, and corrective measures to prevent recurrences.

### 3.06 DECONTAMINATION PROCEDURES

- A. General: Furnish labor, materials, tools, and equipment for decontamination of all personnel, equipment and supplies that enter the contaminated work area or are exposed to contaminated material. Provide equipment and decontamination pads, etc. necessary for the decontamination of equipment and personnel.
- B. Equipment and Tools Decontamination: The decontamination procedure shall follow the requirements of 40 CFR 761.79(c)(2), decontamination via a wiping or double wash/rinse with an approved solvent. Equipment and tools that cannot be decontaminated will be managed in the same manner as the material it was used to abate.
- C. Personnel Decontamination: Provide and maintain a decontamination area which is to be located in the contamination reduction zone. Coordinate the location of the decontamination area with the Consultant. Decontamination of personnel and equipment is required after performance of activities in the exclusion zone. The personnel decontamination area may be in the form of a mobile trailer or field station. Personnel decontamination shall, at a minimum, consist of: decontamination before breaks and each time workers exit the exclusion zone, and at the completion of each work day to prevent worker exposure and the spread of contaminants off Site.
- D. Emergency Decontamination: Should a worker be splashed with contaminants, the worker shall be immediately escorted to the field decontamination station and decontaminated in accordance with the HASP. Site eye wash and shower stations shall be made available and operable.

**END OF SECTION**

## PART 1 - GENERAL

### 1.01 IN GENERAL

The General Conditions and all parts of the Bid and Contract Documents are made part of this Section as if fully repeated herein.

### 1.02 RELATED WORK SPECIFIED ELSEWHERE:

- A. Divisions 0 and 1 of the Project Manual
- B. Section 02 41 00 – Selective Demolition
- C. Section 02 82 13 – Asbestos Containing Roofing Material Abatement
- D. Section 05 50 00 – Miscellaneous Metals
- E. Section 06 10 00 – Rough Carpentry
- F. Section 07 52 00 – Elastomeric Membrane Roofing
- G. Section 07 62 00 – Sheet Metal and Flashing
- H. Section 22 20 00 – Plumbing
- I. Section 50 00 00 – Project-Specific Available Information

### 1.03 SUMMARY OF WORK

This Section specifies requirements for the following Scope of Work:

- A. The Contractor shall supply all labor, equipment, staging, temporary protection, tools, and appliances necessary for the proper completion of the work in this Section, as required in the Specification and in accordance with good construction practice.
- B. Scarify concrete substrates and prepare for application of new roofing at Roof Areas A and B.
- C. Repair deteriorated concrete deck substrate on a Unit Price basis as indicated in Section 01 22 00 – Unit Prices:
  - 1. V-notch sealant crack repairs of existing composite concrete deck (Unit Price Item).
  - 2. Perform patching and repairing of spalled concrete deck substrates using patching materials (Unit Price Item).
- D. Repair concrete deck substrate at existing equipment to be removed (MEP and associated dunnage)
- E. Clean and restore all areas affected by the work.

### 1.04 JOB CONDITIONS

- A. SPECIAL NOTE: Portions of the existing flashings and roofing membrane have been tested and found to contain Asbestos Containing Materials (ACM). The Contractor shall comply with the National Emission Standard for Hazardous Air

Pollutants (NESHAP) regulation published in the Federal Register under 40 CFR, Part 61, subpart M. Specific attention is directed to Appendix A of this regulation entitled, Interpretive Rule Governing Roof Removal Operations. In addition to these regulations, the Contractor shall comply with OSHA Regulation (29 CFR Parts 1910 et al – Occupational Exposure to Asbestos; Final Rule) and all other State and Local guidelines regarding asbestos containing material removal and disposal. For clarification, refer to Section 02 82 13 Asbestos Containing Material Removal.

- B. Lead Paint and Flashings: Lead containing materials were identified at the Work Site. Reference Inspection Report in Section 50 30 00 Hazardous Building Materials Inspection and Inventory. The Contractor shall be responsible for compliance with OSHA lead in construction (29 CFR 1926.62 "Lead Exposure in Construction: Interim Final Rule") and RCRA (USEPA and CT DPH and DEEP) disposal requirements for completion of the demolition and roof replacement work. Lead containing materials shall be managed and disposed by the Contractor in strict accordance to applicable Local, State, and Federal laws.
- C. Polychlorinated Biphenyls: Testing for polychlorinated biphenyls (PCBs) is not required on this project. The existing glazing and sealants at the clerestory skylight units at Roof Area C are to be removed by the contractor and disposed of as PCB waste.
- D. The Contractor is responsible for the containment of all dust, dirt, debris, overspray, and run-off resulting from the work. The Contractor shall collect and contain all materials and repair any resulting damage to adjacent surfaces, site fixtures, personal property, or adjacent repairs.
- E. Store flammable liquid and materials away from open sparks, flames, and extreme heat.
- F. Comply with all OSHA requirements for construction. It is the contractor's responsibility to comply with all state, federal, and local codes, guidelines, and safety requirements.
- G. Should unforeseen conditions (not inclusive of Unit Price items) be encountered, the Contractor will be responsible for temporary protection and weather tightness until a solution is determined by the Engineer and implemented by the Contractor.
- H. Equipment required to hoist materials to the roof and remove debris from the roof shall be supplied, maintained, and operated by the Contractor.
- I. The Contractor shall provide protection of entrance ways, building interior spaces, sitework, plantings, landscaping, building surfaces, and similar items to protect from damage. Items damaged because of the work in this section shall be repaired or replaced by the Contractor to the satisfaction of and at no additional cost to the Owner.

#### 1.05 REFERENCES

- A. Comply with provisions of following codes, specifications, and standards except where more stringent requirements are shown on the design Drawings or specified herein:
1. "Hot Weather Concreting," reported by ACI Committee 305 (ACI 305R).
  2. "Cold Weather Concreting" reported by ACI Committee 306 (ACI 306R).
  3. ICRI: International Concrete Repair Institute.
  4. CRSI: Concrete Reinforcing Steel Institute.
  5. SSPC: Steel Structures Painting Council (The Society for Protective Coatings).
  6. ASTM: American Society of Testing and Materials.

#### 1.06 SUBMITTALS

- A. Manufacturer's product and installation literature for approval. Include shop drawings for project specific details.
- B. Material Safety Data Sheet (MSDS) for each product used.
- C. Submit associated equipment and materials list including, but not limited to, surface preparation equipment and methods used, bonding agents, etc.
- D. Submit means and methods for curing and protecting all placements and repairs, and for masking surrounding surfaces.

#### 1.07 UNIT PRICE WORK

- A. The Unit Prices are above and beyond those shown on the Contract Drawings, and shall be carried by the Contractor within the Base Bid Scope of Work. Unit prices for certain work of this Section are listed in Section 01 20 00 – Contract Considerations, Paragraph 1.4 Unit Prices that precedes the technical specifications. The Contractor and Engineer shall verify the actual quantities used.
- B. For notch and seal concrete crack repairs, the Base Bid shall include all labor, access, materials, and accessories required for the proper installation. The current quantity of cracked concrete roof deck is unknown. The base bid shall include **150** linear feet of notch and seal repairs.
- C. For concrete spall repairs, the Base Bid shall include all labor, access, materials, and accessories required for the proper installation. The current quantity of spalled concrete roof deck is unknown. The base bid shall include **50** square feet of spall repairs.

#### 1.08 DIMENSIONS AND QUANTITIES

- A. All dimensions and quantities shall be determined or verified by the Contractor. The Contract Drawings have been compiled from various sources and may not reflect the actual condition at the time of construction. The Contractor is advised to take all precautions and make all investigations necessary to install the proposed work. The Owner will not consider unfamiliarity with the job conditions as a basis for additional compensation.

#### 1.09 QUALITY ASSURANCE

- A. Contractor must coordinate site visits with appropriate manufacturer's field representative to view surface preparations, material mixing, application procedures, and curing operations for each different material.

#### 1.10 TEST AREAS

- A. Before full-scale work is commenced, and separate from any Unit Price quantities, execute the following work for trial work areas to be reviewed by the Manufacturer's Field Representative as to surface preparation and material mixing and application acceptability.
1. Concrete surface preparation (approximately 20 square feet).
  2. Concrete crack repair (approximately 4 linear feet).
  3. Concrete spall repair (approximately 1 square feet).

#### 1.11 GUARANTEES

- A. Upon completion of the work, and prior to final payment, the Contractor shall submit a Guarantee of his work to be free from defect in materials and workmanship. This Guarantee shall be for a period of three (3) years from the date of substantial completion, and shall be signed by a Principal of the Contractor's firm, and sealed if a corporation.

### PART 2 - MATERIALS

#### 2.01 NOTCH AND SEAL REPAIRS

- A. Sealant for notch and seal repairs shall be high-performance, low-modulus, high-movement, non-sag, fast-curing, ready-to-use hybrid sealant complying with ASTM C-920, Type S, Grade NS, Class 50, use NT, M, A, O. Acceptable products:
1. Masterseal NP100 by BASF Corporation Construction Systems
  2. Dymonic FC by Tremco Commercial Sealants and Waterproofing
  3. DynaTrol 1-XL by Pecora Corporation
  4. SikaHyflex-150 LM by Sika Corporation

2.02 CONCRETE ROOF DECK PORE SEALING/RESURFACING MORTAR

- A. Repair mortar for filling bugholes, honeycombing, shallow surface imperfections, air holes, holidays, minor repairs for gouges, and shallow broken edges, etc., shall be:
1. SikaTop 121 Plus or SikaTop 122 Plus; Sika Corporation
  2. MasterEmaco T302; BASF
  3. Emaco R300 C1; MasterBuilders/DeGussa
  4. Tnemec Series 216 Quick-Fill; Tnemec Co., Inc.

2.03 CONCRETE ROOF DECK SPALL REPAIR MORTAR

- A. Hand-applied patching mortar for horizontal concrete spalls shall be a polymer-modified cementitious repair mortar, such as:
1. MasterEmaco T302; BASF
  2. Sika Monotop 611; Sika Corporation.
  3. Emaco R310 CI; Master Builders, DeGussa.

2.04 CONCRETE ROOF DECK MORTAR BONDING AGENT/REINFORCING PROTECTION

- A. Bonding agent for application onto prepared spall repair substrates as well as anti-corrosion coating for cleaned steel reinforcement shall be:
1. Sika Armatec 110 EpoCem; Sika Corporation
  2. Rebar Primer and Bonding Agent; ThoRoc/DeGussa
  3. MasterEmaco P124; BASF

2.05 CONCRETE ROOF DECK ACCESSORY MATERIALS

- A. Fasteners for concrete spalls that exceed 1-1/2" in depth shall be minimum 1-1/2" long by 1/4" diameter drive pins in stainless-steel sheaths as manufactured by Star, Powers Fasteners, or Hilti. Embedment into substrate shall be 1-1/4" minimum. It is recommended that stainless-steel pins have through-holes at exposed ends to accept tie wire.
- B. Type 304 stainless-steel wire mesh to be wrapped around drive pins for concrete spalls that are in excess of 1-1/2" deep shall be a 2" x 2" grid mesh, 14 gage wire (minimum).
- C. Burlap for curing patches shall be heavyweight burlap cloth.
- D. Polyethylene for curing patches shall be 6-mil polyethylene plastic sheet, or equal.

### PART 3 - EXECUTION

#### 3.01 GENERAL WORKMANSHIP

- A. Do not deliver to site or install any material or system that has not been approved. Materials installed without approval may be required to be removed at no additional cost to the Owner.
- B. Comply with the manufacturer's written instructions and these Specifications for all renovations and associated work.
- C. Partial or unmarked cans or rolls of materials cannot be used.
- D. Verify that all surfaces have been demolished to the specified depth and surface profile, and thoroughly cleaned for the areas to receive repairs.
- E. Provide all devices and protection (including heaters, dehumidification, ventilation, etc.) necessary to maintain areas and surfaces at the proper temperature, humidity, and surface moisture content for the curing of repair mortar, epoxy, and other materials.
- F. Refer to Section 03 30 00 Cast-in-Place Concrete for normal and cold-weather curing procedures.

#### 3.02 SURFACE PREPARATION FOR ROOFING

- A. Comply with manufacturer's surface preparation requirements and those listed below.
- B. The prepared concrete surfaces must be dry, clean, and smooth. Provide dryers, if necessary, to dry concrete surfaces prior to installing new work. Open flame devices shall not be used.
- C. Provide scarification in accordance with this section.
- D. Remove protrusions, fins, and irregularities in the surface of the existing deck.
- E. Smooth sharp offsets or transitions and fill voids with patching the specified patching material.
- F. Install the specified material to fill voids, bug holes, honeycombing, surface imperfections, etc. Finish the repairs flush with the existing surfaces. Ensure that the surface, texture, and profile is roughed and textured match surrounding concrete.
- G. Perform ASTM D4263 surface moisture testing prior to application of new roofing.



- H. Coordinate with Section 07 52 00 – Elastomeric Roof Membrane for vapor retarder adhesion test to confirm adequate surface preparation.

### 3.03 CONCRETE SCARIFICATION

- A. **Coal tar pitch is present on the existing concrete roof decks.** Contractor shall remove coal tar pitch from the decks. New work shall not proceed until the deck is accepted as suitable by the Engineer. Coal tar pitch removal shall result in a clean, smooth, and dry deck that is free of contaminants and ready for installation of the specified roof vapor retarder.
- B. Following removal of the existing roof assembly(ies) at concrete deck areas, remove by scarification: the top surface of sound existing concrete, coal tar pitch, patches other than sound Portland cement concrete, and loose and disintegrated concrete.
- C. Scarifying Equipment shall be a power-operated, mechanical scarifier capable of uniformly scarifying or removing the surface to depths required in a satisfactory manner. Other types of removal devices may be used if their operation is suitable and if they can be demonstrated to the satisfaction of the Engineer. Wet applications are not allowed.
- D. Uniformly scarify the existing concrete to a minimum depth of 1/8" and in accordance with ICRI CSP level 6 (medium scarification) to remove all existing roofing materials and residue. Remove loose aggregates following scarification procedures.
- E. Report to the engineer any reinforcing exposed during the scarification process.

### 3.04 NOTCH AND SEAL CRACK REPAIRS

- A. Rout or "vee" crack by saw cutting to a minimum depth of 1/2". Do not cut reinforcement.
- B. Clean the routed crack and adjacent area of all loose material with oil-free high-pressure air to blow the crack clean.
- C. Prime joint substrates where recommended in writing by sealant manufacturer. Confine primer to areas that will be covered with sealant in same day. Unless recommended otherwise by sealant manufacturer, re-prime areas exposed for more than 24 hours.
- D. Install sealant to produce uniform, cross-sectional shape, and depth; to directly contact and fully wet joint sides and/or complete fill recesses in joint configuration.

- E. Immediately after sealant application and before skinning or curing begins, tool joint with slightly concave surface, compressing sealant into joint to form smooth, uniform sealant bead; to eliminate air pockets, and to ensure contact and adhesion of sealant with sides of joint. Do not use tooling agent.

### 3.05 CONCRETE ROOF DECK SPALL REPAIRS

- A. The prepared concrete surfaces must be dry, clean, and smooth. Provide dryers, if necessary, to dry concrete surfaces prior to installing new work. Open flame devices shall not be used.
- B. Comply with the manufacturer's written instructions and these Specifications for all renovations and associated work.
- C. Partial or unmarked cans or rolls of materials cannot be used.
- D. Verify that all surfaces have been demolished to the specified depth and surface profile, and thoroughly cleaned for the areas to receive repairs.
- E. Provide all devices and protection (including heaters, dehumidification, ventilation, etc.) necessary to maintain areas and surfaces at the proper temperature, humidity, and surface moisture content for the curing of repair mortar, epoxy, and other materials.
- F. No concrete repair work shall be executed when the temperature in the work areas has dropped below 50 F, unless heated. Consult the manufacturers of the materials for proper application and storage procedures.
- G. In all cases, the prepared surfaces ready to receive concrete repair and coating work, shall be maintained with adequate temporary protection to keep atmosphere and construction related contaminants (dust, debris, water, dirt, laitance, grease, oil, coating overspray, etc.) or any bond inhibiting contaminants from depositing on prepared surfaces.
- H. Remove areas of spalled, cracked, loose, or otherwise unsuitable concrete from the existing concrete surfaces. Define all repair areas with 1/4" deep saw cut perpendicular to the repair surface. Cuts shall not overlap at corners.
  - 1. Using hand and electric power tools (15 lb. maximum chipping hammers) remove all areas of deteriorated, delaminating, de-bonded, spalled, or otherwise damaged concrete from existing surfaces, as required to install the new work. Sound concrete areas adjacent to cracks to determine additional spall areas. Removal of deteriorated concrete and surface preparation shall be completed as recommended by the patching mortar manufacturer and as outlined within these specifications.

2. Prepare the surface of the existing concrete to receive the bonding agent and repair mortar. Provide a 1/2" minimum aggressive surface profile with fractured aggregate (ICRI-CSP 8 or CSP 9). Tool marks should be visible. Examine substrate for cracks and treat with specified crack repair procedure.
3. Thoroughly clean all reinforcing or embedded steel and provide supplemental steel in accordance with this Section.
4. Completely remove all dust, grease, and other impurities via high-pressure water wash or equal, combined with wire brushes, chipping, grinding, or other methods as required to achieve acceptable bonding surfaces. Dampen the existing surface area with clean potable water, to obtain saturated-surface-dry (SSD) conditions.
5. Apply coating/bonding agent to all substrate surfaces and reinforcing steel as recommended by the repair mortar manufacturer. Provide one coat on concrete substrates and two coats on all steel items. Slurry scrub repair mortar into prepared damp substrates.
6. Install repair mortar to properly prepared areas within a time period to achieve a "wet-on-wet" mortar application. Mix repair mortar in accordance with the material manufacturer's instructions. At vertical and overhead spall repairs with a depth greater than 1-1/2", provide pinning and mesh reinforcement. At vertical and overhead spall repairs with a depth of 1-1/2" or less, provide pinning without mesh at 3" on-center each way. Utilize the manufacturer's recommended mix rates.
7. Vertical spall locations that exceed 1-1/2" depth shall have specified drive pins installed into the substrate. Drive pins shall be spaced 6" maximum on center with a minimum of 2 pins per spall, and have stainless-steel wire mesh or hot-dip galvanized wire mesh wrapped throughout the repair to act as a reinforcement line upon installation of the patching materials.
8. The concrete substrates require wetting with water to obtain SSD conditions prior to installing the bonding agent. Consult with the manufacturer's instructions prior to initiating repairs.
9. Finish the repairs flush with the existing surfaces. Ensure that the surface, texture, and profile is roughed and textured match surrounding concrete and to achieve proper mechanical bond with the later applied coating primer. Do not feather edge repairs, but install in 1/2" minimum applications, or as otherwise limited by each materials manufacturer's limitations.
10. Clean uncured materials off of undesired areas with a moist sponge or cloth immediately after application.
11. Provide for proper cure of patch as recommended by the repair material manufacturer. At a minimum, curing shall consist of wet burlap placed over the repair area, continuously wetted to provide a constantly moist burlap, and enclosed with polyethylene, duct taped to the adjacent surfaces. Curing materials shall remain in place for the minimum manufacturer's specified time based upon surface and ambient temperatures and humidity.

12. Associated access required due to building height and geometry for properly curing patches shall be included within the contract bid price. All spall repairs are required to be cured as herein indicated and as required by current ACI concreting practices, with no exceptions.
13. After curing repair, remove all traces of adhesive and dirt left on surfaces from duct tape and masking. Use solvent wipes and touch grinding as required.

### 3.06 REINFORCING AND MISCELLANEOUS EMBEDDED STEEL AT SPALL REPAIR

- A. Perform surface preparation as described previously, and as recommended by the repair mortar manufacturer. Should reinforcing bars be encountered, perform the following work:
- B. All reinforcing steel bars exposed, which have rust (greater than mild surface rusting) that extends to the back of the bar, or where concrete has cracked due to expansive forces from corroding steel, shall have the concrete removed from the full circumference of the bars to provide a minimum clearance of 3/4" all around. If more than one half of any bar diameter is exposed during demolition, remove concrete from the full circumference of bar with minimum 3/4" clearance all around.
- C. Reinforcing steel must be mechanically or sandblast cleaned and free of rust, scale, grease, oil, and other bond-inhibiting matter in accordance with SSPC – SP11, at a minimum, and as required by the rebar coating/boding agent manufacturer. This can be accomplished using power tools, sandblasting, or similar approved methods.
- D. Miscellaneous embedded steel items requiring cleaning shall be sand-blasted or mechanically ground to shiny steel.
- E. After cleaning of reinforcement and embedded steel to bare metal, thoroughly examine and determine section loss. Bars with 25% or greater section loss shall receive supplemental steel. New steel bars shall be placed and tied alongside of existing corroded bar at 1-1/2" depth from surface (where possible). Bar lap shall be developed 20 bar diameters, each end, beyond point of corroded bar. Remove additional concrete as required to fit bar and develop lap lengths. New bar diameter shall match existing nominal bar diameter prior to corrosion. In all cases, new reinforcement shall have a minimum concrete or mortar cover of 1-1/2". Notify Designer in writing if 1-1/2" of concrete cover is not present, nor achievable.
- F. At discontinuous ends of reinforcement, or where 20 bar diameter lap is not possible, supplemental reinforcement may be drilled and epoxied into the substrate adjacent to existing corroded bars. Drill hole 1/4" diameter larger than bar diameter at a depth 10 times the bar diameter. Maintain a minimum 2" cover and edge distance at all drilled hole locations. Clean hole and fill with a high modulus, high-strength, structural epoxy paste adhesive conforming to ASTM C-881 and AASHTO M-235 specifications. Fully insert bar into center of epoxy filled hole.

- G. Apply epoxy coating/bonding agent to all exposed steel and concrete bonding surfaces using brushes in strict accordance with the bonding agent manufacturer's written requirements. Use two coats on steel, and one coat on concrete substrates.
- H. Apply repair mortar as specified and recommended by the manufacturer.
- I. Clean areas adjacent to the repair area prior to curing with a moist sponge or cloth immediately after application.
- J. Apply all curing materials and techniques as specified in this Section.

### 3.07 CLEAN-UP

Prior to acceptance of the masonry work covered in this section, the Contractor shall perform a thorough clean-up of the work site, building surfaces, landscaping, etc. Any plantings or other items damaged shall be repaired or replaced to the satisfaction of and at no additional cost to the Owner

**END OF SECTION**

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## PART 1 - GENERAL

### 1.01 IN GENERAL

The General Conditions and all parts of the Bid and Contract Documents are made part of this Section as if fully repeated herein.

### 1.02 RELATED WORK SPECIFIED ELSEWHERE:

- A. Divisions 0 and 1 of the Project Manual
- B. Section 04 50 00 - Masonry
- C. Section 10 75 16 - Flagpole

### 1.03 SUMMARY OF WORK

This Section specifies requirements for the following Scope of Work:

- A. In general, the Contractor shall supply all labor, materials, equipment, temporary protection, tools and appliances necessary for the proper completion of the work in this section, as required in the specifications and in accordance with good construction practice.
- B. The work under this Section includes cast-in-place concrete foundations and associated special inspections as shown on the contract documents.
- C. Coordinate with Section 04 50 00 Masonry for brick paving and setting bed over cast-in-place foundations and Section 31 00 00 Site Work.
- D. Clean all areas affected by the work to the satisfaction of the Owner.

### 1.04 JOB CONDITIONS

- A. The Contractor shall provide all protection, barriers, and guards necessary to segregate his work area and the areas below, from pedestrian and vehicular traffic. Also protect existing buildings, landscaping and paved areas from damage.
- B. Environmental Requirements: Do not place concrete during rain, sleet, or snow unless adequate protection is provided, and the Engineer's approval is obtained. Do not allow rainwater to increase the mixing water or damage the surface finish.
- C. The Contractor is responsible for the containment of all dust, dirt, debris, overspray, and run-off resulting from the work. The Contractor shall collect and contain all materials and repair any resulting damage to adjacent surfaces, site fixtures, personal property, or adjacent repairs.
- D. Comply with all OSHA requirements for construction. It is the contractor's responsibility to comply with all state, federal, and local codes, guidelines, and safety requirements.

E. Should unforeseen conditions (not inclusive of Unit Price items) be encountered, the Contractor will be responsible for temporary protection and weather tightness until a solution is determined by the Engineer and implemented by the Contractor.

F. Cold Weather Concreting:

1. Conform to ACI 306 latest edition, "Recommended Practice for Cold Weather Concreting."
2. Temperature of concrete when placed shall not be less than the following:

Minimum Concrete Temperature °F  
Sections with Least Dimension

Air Temp (°F)	Under 12 inches	12 inches and Over
30 to 45	60	50
0 to 30	65	55
Below 0	70	60

3. When placed, heated concrete shall not be warmer than 80 F
4. Prior to placing concrete, all ice, snow, and surface and subsurface frost shall be removed, and the temperature of the surfaces to be in contact with the new concrete shall be raised to the temperature specified above for placing.
5. Protect the concrete from freezing for four (4) days after placement.
6. Heated enclosures shall be strong and windproof to ensure adequate protection of corners, edges, and thin sections. Do not permit heating units to locally heat or dry the concrete. Do not use combustion heaters during the first 24 hours unless the concrete is protected from exposure to exhaust gases, which contain carbon dioxide.

G. Hot Weather Concreting:

1. Conform to ACI 305 latest edition, "Recommended Practice for Hot Weather Concreting." Take precautions when the ambient air temperature is 90 F or above. Temperature of the concrete when placed shall not exceed 80 F. Cool forms and reinforcing to a maximum of 90 F by spraying with water prior to placing concrete. Do not use cement that has reached temperatures in excess of 170 F.

H. Prevent plastic shrinkage cracking due to rapid evaporation of moisture. Do not place concrete when the evaporation rate (actual or anticipated) equals or exceeds 0.20 pounds per square foot per hour, as determined by Figure 2.1.4 of ACI 305.

1. Set-retarding admixtures may be used with Engineer's approval when the ambient air temperature is 90 F or above to off-set the accelerating effects of high temperatures.



## 1.05 REFERENCES

- A. Reference Standards: Except as modified or supplemented herein, all concrete materials, placing, furnishing, curing and all other appurtenant work shall meet the requirements of the latest edition of the following Standard Specifications. Pertinent portions of the reference standards are included herein. Refer to the standards for detailed requirements.
1. AMERICAN CONCRETE INSTITUTE STANDARDS (ACI)
    - a. 301 - Standard Specifications for Structural Concrete for Buildings.
    - b. 304 - Recommended Practice for Measuring, Mixing, Transporting, and Placing Concrete.
    - c. 316 - Building Code Requirements for Reinforced Concrete
    - d. "Hot Weather Concreting," reported by ACI Committee 305 (ACI 305R).
    - e. "Cold Weather Concreting" reported by ACI Committee 306 (ACI 306R).
- B. ASTM: American Society of Testing and Materials.

## 1.06 SUBMITTALS

- A. Manufacturer's product and installation literature for approval. Include shop drawings for project specific details.
- B. Material Safety Data Sheet (MSDS) for each product used.
- C. Proposed Concrete Foundation Mix Design:
1. Prior to commencing concrete work submit and obtain Engineer's approval of certified test report describing proposed concrete mix design, including:
  2. Fine Aggregates - Source, type, gradation, deleterious substances, and saturated surface dry specific gravity (ASTM C128).
  3. Coarse Aggregates - Source, type, gradation, deleterious substances, and saturated surface dry specific gravity (ASTM C127); soundness (ASTM C88).
  4. Ratio of fine to total aggregates.
  5. Weight (surface dry) of each aggregate per cubic yard.
  6. Total water content (gallons) per cubic yard, water/cementitious materials ratio, and proposed source.
  7. Slump on which design is based, ASTM C143.
  8. Brand, type, and quantity of cement.
  9. 7-day and 28-day compressive strength results from each of two (2) sets of test cylinders for each proposed mix.
  10. Air Content, ASTM C231 or ASTM C173.
  11. Certifications of Chloride Content of admixtures.
  12. Water soluble chloride ion content of concrete, ASTM G1218.
  13. Proportions of all ingredients including all admixtures added either at time of batching or at job site.

- D. Cylinder Compression Test Reports:
  - 1. Submit two (2) copies of certified test reports to Engineer indicating results of tests required in Part 3 hereof.
  
- E. Ready-Mix Delivery Tickets:
  - 1. Submit one copy to the Engineer of ready-mix delivery ticket for each load delivered.
  - 2. Include identification and quantity of concrete supplied.
  - 3. Include time loaded and time unloaded.
  - 4. Reading of revolution counter at times initial water added, supplemental water added, and unloading completed.
  - 5. Amounts of initial and supplemental water added, and name of individual authorizing supplementing water.

#### 1.07 DIMENSIONS AND QUANTITIES

- A. All dimensions and quantities shall be determined or verified by the Contractor. The Contract Drawings have been compiled from various sources and may not reflect the actual condition at the time of construction. The Contractor is advised to take all precautions and make all investigations necessary to install the proposed work. The Owner will not consider unfamiliarity with the job conditions as a basis for additional compensation.

#### 1.08 QUALITY ASSURANCE

- A. Reference Standards: Except as modified or supplemented herein, all concrete materials, placing, furnishing, curing and all other appurtenant work shall meet the requirements of the latest edition of the following Standard Specifications. Pertinent portions of the reference standards are included herein. Refer to the standards for detailed requirements.
  - 1. AMERICAN CONCRETE INSTITUTE STANDARDS (ACI)
    - a. 301 - Standard Specifications for Structural Concrete for Buildings.
    - b. 304 - Recommended Practice for Measuring, Mixing, Transporting, and Placing Concrete.
    - c. 316 - Building Code Requirements for Reinforced Concrete
  - 2. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)
    - a. ASTM C109 "Test Method for Compressive Strength of Hydraulic Cement Mortars"
  
- B. Special Inspections are required for cast-in-place shallow foundations, reinforcing, concrete placement, and curing. Coordinate with the Architect/Engineer, Owner, and/or CA to schedule inspection so as not to delay the work.

#### 1.09 GUARANTEES

- A. Upon completion of the work, and prior to final payment, the Contractor shall submit a Guarantee of his work to be free from defect in materials and workmanship. This

Guarantee shall be for a period of three (3) years from the date of substantial completion, and shall be signed by a Principal of the Contractor's firm, and sealed if a corporation.

## PART 2 – PRODUCTS

### 2.01 CONCRETE MATERIALS

- A. Portland Cement: ASTM C 150, Type I or II.
- B. Aggregate: ASTM C 33, uniformly graded, from a single source. Maximum aggregate size = 1-1/2 inch at foundations and 3/4 inch at slabs.
- C. Water: ASTM C 94.
- D. Air-Entraining Admixture: ASTM C 260.
- E. Water-Reducing Admixture: ASTM C 494, Type A.
- F. High-Range, Water-Reducing Admixture: ASTM C 494, Type F.
- G. Water-Reducing and Accelerating Admixture: ASTM C 494, Type E.
- H. Water-Reducing and Retarding Admixture: ASTM C 494, Type D.

### 2.02 CONCRETE PRODUCTION

- A. Concrete Mixes, General - Prepare design mixes, proportioned according to ACI 211.1 and ACI 301-05.  
  
Refer to the Contract Drawings for additional information.
- B. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94 and ASTM C 1116, and furnish batch ticket information.
- C. Concrete shall have a minimum compressive strength of 3000 psi for foundations and 3000 psi for slabs at 28 days with a slump of no more than 4 inch and air entrainment of 4-1/2 to 7-1/2%.
- D. Proportioning: Proportion ingredients to produce a well-graded mix of high density and maximum workability consistent with approved mix design and subject to the characteristics as specified in the Contract Drawings.
- E. Mixing:
  - 1. Central Mixed Concrete - 1 minute for mixer capacities one cubic yard or less plus 15 seconds for each cubic yard or fraction thereof of additional capacity.

2. Truck Mixed Concrete - 100 revolutions after the introduction of all ingredients.
- F. Tempering and Control of Mixing Water:
1. Mix concrete only in quantities for immediate use. Do not use concrete which has stiffened due to initial set or concrete, which cannot be discharged within 1-1/2 hours or 300 revolutions of the mixer drum after the introduction of the mixing water.
  2. Water may be added to concrete arriving at the site, only if neither the maximum slump nor the maximum water cement ratio is exceeded. Provide additional cement if required by the addition of water to maintain water cement ratio within specified limits. Obtain Engineer's approval prior to adding water or cement.
  3. Incorporate any added water or cement by additional mixing equal to half the total mixing required.

#### 2.03 CURING MATERIALS

- A. Impervious-sheet materials shall conform to ASTM C 171, type optional, except that polyethylene sheet shall not be used.
- B. Burlap and cotton mat used for curing shall conform to AASHTO M 182, Class 2.
- C. Topically applied and admix curing compounds and/or agents are not allowed due to project required epoxy floor coating and concrete densifier.

#### 2.04 WATER

- A. Water for mixing and curing shall be fresh, clean, potable, and free of injurious amounts of oil, acid, salt, or alkali, except that non-potable water may be used if it meets the requirements of ASTM C94.

#### 2.05 EMBEDDED ITEMS

- A. Embedded items shall be of the size and type indicated or as needed for the application.
- B. All other embedded items shall also be securely anchored and protected from damage or displacement.

### PART 3 - EXECUTION

#### 3.01 GENERAL CONCRETE WORKMANSHIP

- A. Do not deliver to site or install any material or system that has not been approved. Materials installed without approval may be required to be removed at no additional cost to the Owner.

- B. Before commencing concrete placement, the following shall be performed:
- C. Surface Preparation:
1. Surfaces to receive concrete shall be clean and free from frost, ice, mud, and water.
  2. Earth (subgrade, base, or subbase courses) surfaces upon which concrete is to be placed shall be clean, damp, and free from debris, frost, ice, and standing or running water. The foundation shall be well drained and shall be satisfactorily graded and uniformly compacted.
  3. Rock surfaces upon which concrete is to be placed shall be free from oil, standing or running water, ice, mud, drummy rock, coating, debris, and loose, semi-detached, or unsound fragments. Joints in rock shall be cleaned to a satisfactory depth, as determined by the Engineer, and to firm rock on the sides. Immediately before the concrete is placed, rock surfaces shall be cleaned thoroughly by the use of air-water jets or sandblasting as specified below for Previously Placed Concrete. Rock surfaces shall be kept continuously moist for at least 24 hours immediately prior to placing concrete thereon. All horizontal and approximately horizontal surfaces shall be covered, immediately before the concrete is placed, with a layer of mortar proportioned similar to that in the concrete mixture. Concrete shall be placed before the mortar stiffens.
  4. Concrete surfaces to which other concrete is to be bonded shall be abraded in an approved manner that will expose sound aggregate uniformly without damaging the concrete. Laitance and loose particles shall be removed. Surfaces shall be thoroughly washed and shall be moist but without free water when concrete is placed.
- D. Equipment:
1. Transporting and conveying equipment shall be in-place, ready for use, clean, and free of hardened concrete and foreign material.
  2. Equipment for consolidating concrete shall be at the placing site and in proper working order.
  3. Equipment and material for curing and for protecting concrete from weather or mechanical damage shall be at the placing site, in proper working condition, and in sufficient amount for the entire placement.
- E. When hot, windy conditions during concreting appear probable, equipment and material shall be at the placing site to provide windbreaks, shading, fogging, or other action to prevent plastic shrinkage, cracking, or other damaging drying of the concrete.
- F. Before placement of concrete, care shall be taken to determine that all embedded items are firmly and securely fastened in place as indicated on the drawings, or required. Conduit and other embedded items shall be clean and free of oil and other foreign matter such as loose coatings or rust, paint, and scale. The embedding of wood in concrete will be permitted only when specifically authorized or directed. Voids in sleeves, inserts, and anchor slots shall be filled temporarily with readily removable materials to prevent the entry of concrete into voids.

Welding shall not be performed on embedded metals within 2' of the surface of the concrete. Tack welding shall not be performed on or to embedded items.

### 3.02 INSTALLATION

- A. Conveying:
1. Convey concrete from mixer to final position as rapidly as practical without segregation or loss of material.
  2. Use only metal or metal lined chutes with maximum length of 20', maximum slope 1 vertical to 2 horizontal and minimum slope 1 vertical to 3 horizontal.
  3. Provide a hopper at the end of long belt conveyors and chutes not meeting the above requirements.
  4. Conveying by pumping methods shall conform to ACI 304. Maximum loss of slump, 2 inches. Do not use pipe made of aluminum or aluminum alloy to convey concrete. Should pumping be required for this project, all costs for pumping shall be borne by the Contractor. No additional compensation will be considered for any pumping costs.
- B. Depositing:
1. Deposit concrete in a continuous operation until the section is completed. Regulate rate of placement so concrete remains plastic and flows into position.
  2. Maximum height of concrete free fall is 4'.
  3. All concrete shall be placed within 2 hours of batching. All concrete on site more than 2 hours from batching time shall be rejected and sent back to the plant.
- C. Consolidation:
1. Use mechanical vibrating, rodding or spading for consolidation. Conform to 309-72, "Recommended Practice for Consolidation of Concrete."
  2. Do not use vibrators to transport concrete in forms.
  3. Minimum vibrator speed 8000 rpm.
  4. Vertically invert vibrators at points 18 inch apart to a depth sufficient to penetrate 6 inches into the preceding layer. Vibrate each location for a length of time to obtain adequate consolidation (generally 5 to 15 seconds).
- D. Embedments:
1. Accurately position and securely fasten all anchor bolts, castings, steel shapes, conduit, sleeves, and other materials to be embedded in the concrete.
  2. Embedments shall be clean when installed. Remove concrete spatter from all surfaces not in contact with concrete.
- E. Wash-out
1. The Contractor shall remove residue from concrete mixing wash-out from all landscape, walkways, curbs, driveways, and similar surfaces to the satisfaction of the Owner.

### 3.03 CURING

#### A. Normal Conditions

1. All concrete shall be prevented from drying for at least the first 7 days after placing. All slabs shall be cured by spraying on the specified curing compound as per the manufacturer's printed instructions. Concrete walls shall be cured as carefully as the slabs. However, instead of covering the sides with the curing compound, it would be satisfactory if the forms were "loosened after the concrete had hardened" and the wall sprinkled with water frequently for at least five (5) days allowing the water to flow down the sides between the forms and the concrete. After the five-day wetting the forms may be removed. Curing compounds, which discolor the concrete, are not permitted.

#### B. Cold Weather Conditions

1. Whenever the temperature of the surrounding air is below 40 F, all concrete shall be maintained at a temperature of not less than 50 F for at least 72 hours and shall be protected from freezing for at least another 72 hours, or for as much time as is necessary to insure proper curing of the concrete. The housing, covering or other protection used in connection with the curing shall remain in place and intact for at least 24 hours after the artificial heating is discontinued. No dependence shall be placed on salt or other chemicals for the prevention of freezing. The approved practice for Winter Concreting are those outlined in ACI 306.

#### C. Alternates

1. Methods of curing other than those specified above shall be approved by the Engineer before being used.

### 3.04 FINISHING

- A. Trowel exposed concrete surfaces to a smooth, dense finish, free of trowel marks, and uniform in texture and appearance.
- B. Provide positive slope for water runoff to base perimeter.

### 3.05 REMOVAL AND REPAIRS

- A. Remove excavation support and protection systems when construction has progressed sufficiently to support excavation and bear soil and hydrostatic pressures. Remove in stages to avoid disturbing underlying soils or damaging structures, pavements, facilities, and utilities.
  1. Remove excavation support and protection systems to a minimum depth of 48 inches below overlaying construction and abandon remainder.
  2. Repair or replace, as approved by Architect, adjacent work damaged or displaced by removing excavation support and protection systems.

### 3.06 FIELD QUALITY CONTROL

- A. Testing Agency: Coordinate the notification, access, and assistance of the State's Special Inspector to perform field quality-control testing.
- B. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earthwork only after test results for previously completed work comply with requirements.
- C. Footing Subgrade: At footing subgrades, at least one test of each soil stratum will be performed to verify design bearing capacities. Subsequent verification and approval of other footing subgrades may be based on a visual comparison of subgrade with tested subgrade when approved by Designer.
- D. Testing agency will test compaction of soils in place according to ASTM D 1556, ASTM D 2167, ASTM D 2922, and ASTM D 2937, as applicable. Tests will be performed at the following locations and frequencies:
  - 1. Paved or Slab Areas: At subgrade and at each compacted fill and backfill layer, at least 1 test for every 2000 sq. ft. or less of paved area or building slab, but in no case fewer than 3 tests.
- E. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil to depth required; recompact and retest until specified compaction is obtained.

### 3.07 CLEAN-UP

Prior to acceptance of the masonry work covered in this section, the Contractor shall perform a thorough clean-up of the work site, building surfaces, landscaping, etc. Any plantings or other items damaged shall be repaired or replaced to the satisfaction of and at no additional cost to the Owner

**END OF SECTION**



PART 1 - GENERAL

1.01 IN GENERAL

The General Conditions and all parts of the Bid and Contract Documents are made part of this Section as if fully repeated herein.

1.02 RELATED WORK SPECIFIED ELSEWHERE:

- A. Divisions 0 and 1 of the Project Manual
- B. Section 02 41 00 - Selective Demolition
- C. Section 02 82 13 - Asbestos Containing Roofing Material Abatement
- D. Section 03 30 00 - Cast in Place Concrete
- E. Section 06 10 00 - Rough Carpentry
- F. Section 07 52 00 - Elastomeric Membrane Roofing
- G. Section 07 62 00 - Sheet Metal and Flashing
- H. Section 50 00 00 - Project-Specific Available Information

1.03 SUMMARY OF WORK:

In general, the Contractor shall supply all labor, materials, equipment, temporary protection, tools, and appliances necessary for the proper completion of the work in this Section, as required in the Specifications, in accordance with good construction practice, as amended. The work under this Section generally includes the following:

- A. Provide and maintain vacuum equipment as required to reduce dust accumulation at the site.
- B. Perform a general cleaning of the area and all masonry surfaces within the work area, and those outside the work area that are affected, from construction related activities and materials. Protect adjacent areas such as roofing, walls, and site components during cleaning.
- C. Remove and replace mortar as required to raise reglet roof counterflashings.
- D. Remove, salvage brick, and rebuild the masonry parapet at the south end of Building 460, Roof Area C.
- E. Replace 100 spalled or cracked brick units as encountered during masonry removal, salvage, rebuilding, and repointing operations.
- F. Remove, salvage brick, and rebuild the top of masonry wall at the roof edge/perimeter of Building 460, Roof Areas C and D.
- G. Below the areas designated for masonry rebuild, cut and repoint mortar joints at the top of masonry wall and parapets where indicated on drawings for Building 460, Roof Areas C and D.

- H. Remove and replace masonry in order to install new through wall flashings at roof to wall locations as indicated on the Contract Drawings. Provide temporary protection to prevent water infiltration.
- I. Remove existing chimneys down to roof deck level. Coordinate with Section 05 50 00 – Miscellaneous Metals for deck infill.
- J. Wall penetrations are to be 100% weather-tight at the end of each workday.
- K. Provide brick pavers, bedding and joint sand, and aggregate base at flagpole foundations.
- L. Remove rubbish and debris from the project site daily; do not allow accumulations inside or outside the buildings.
- M. Supply all necessary chutes, disposal facilities, transportation, and labor necessary to dispose of all demolished materials, dirt, and debris off-site in a legal dumping area. The Contractor shall obtain all permits necessary to transport and dispose of all materials, rubbish and debris.

#### 1.04 JOB CONDITIONS

- A. SPECIAL NOTE: Portions of the existing flashings and roofing membrane have been tested and found to contain Asbestos Containing Materials (ACM). The Contractor shall comply with the National Emission Standard for Hazardous Air Pollutants (NESHAP) regulation published in the Federal Register under 40 CFR, Part 61, subpart M. Specific attention is directed to Appendix A of this regulation entitled, Interpretive Rule Governing Roof Removal Operations. In addition to these regulations, the Contractor shall comply with OSHA Regulation (29 CFR Parts 1910 et al – Occupational Exposure to Asbestos; Final Rule) and all other State and Local guidelines regarding asbestos containing material removal and disposal. For clarification, refer to Section 02 82 13 Asbestos Containing Material Removal.
- B. Lead Paint and Flashings: Lead containing materials were identified at the Work Site. Reference Inspection Report in Section 50 30 00 Hazardous Building Materials Inspection and Inventory. The Contractor shall be responsible for compliance with OSHA lead in construction (29 CFR 1926.62 "Lead Exposure in Construction: Interim Final Rule") and RCRA (USEPA and CT DPH and DEEP) disposal requirements for completion of the demolition and roof replacement work. Lead containing materials shall be managed and disposed by the Contractor in strict accordance to applicable Local, State, and Federal laws.
- C. Polychlorinated Biphenyls: Testing for polychlorinated biphenyls (PCBs) is not required on this project. The existing glazing and sealants at the clerestory skylight units at Roof Area C are to be removed by the contractor and disposed of as PCB waste.

- D. The Contractor shall utilize skilled and experience specialty workers having the specified minimum experience in masonry restoration to perform the work, in accordance with requirements listed herein. Experienced trade workers shall be utilized for all aspects of the masonry work.
- E. Do not leave partially completed sections exposed to the elements overnight. Provide all devices necessary to maintain areas at the correct temperature and humidity for proper curing of mortar.
- F. To prevent staining of adjacent construction during the work, immediately remove mortar or coating, which comes in contact with exterior surfaces. Protect all building components from damage or staining during construction.
- G. Prepare, install, and cure all materials in accordance with these Specifications, all referenced standards, the Brick Industry Association (B.I.A.) Technical Notes, and the Manufacturer's Printed Instructions. In the case of a discrepancy, the Specifications will prevail.
- H. A/E, Owner, and/or CA shall confirm areas of the work. Areas not outlined and agreed to by the Owner prior to commencing the work will not be considered for compensation.
- I. The Contractor shall supply, install, and maintain all shoring, supports, barriers, protection, warning lines, lighting, and personnel required to support the structure, fixtures and facilities affected by his work and segregate the work area(s) from pedestrian or vehicular traffic, as well as to prevent damage to the building, occupants, and the surrounding landscaped and paved areas.
- J. Coordinate the work in this section with the work by other trades to ensure the orderly progress of the work. No masonry work shall be performed until submittals have been reviewed and approved by the A/E, Owner, and/or CA for acceptability.
- K. Under no circumstances shall the Contractor remove existing materials and systems to the ground in an uncontrolled manner. Machinery or devices used shall be manufactured for this purpose. Adjacent building and property areas shall be protected from airborne debris.
- L. All areas of existing masonry or flashings removed shall be made secure and weathertight during the same day. No building interiors shall be left exposed to the weather at the end of each workday.
- M. During restoration operations, the Contractor is responsible for the containment of all dust, dirt, debris, overspray, and run-off resulting from the work. The Contractor shall collect and contain all materials and repair any resulting damage to adjacent surfaces, site fixtures, or personal property. Specific attention is drawn to the use of chemicals and cleaners.
- N. Equipment required to hoist materials to the roof and remove debris from the roof shall be supplied, maintained, and operated by the Contractor.

- O. Remove rubbish and debris from the project site daily; do not allow accumulations inside or outside the buildings.
- P. Removal of the existing building's roofing, flashing and associated components and other exterior waterproofing components will be restricted to maintain the roof in a watertight, secure condition throughout the duration of the project. The Contractor shall coordinate all repair work to accommodate this restriction.
- Q. The Contractor shall be responsible for securing and protecting their equipment, materials, and tools (as well as partially completed construction) from wind blow-off and vandalism or abuse.
- R. Prepare, install, and cure all materials in accordance with these Specifications, the Brick Industry Association (B.I.A.) Technical Notes, and the Manufacturer's Printed Instructions. In the case of a discrepancy, most restrictive requirements will prevail.
- S. Engineer and Contractor shall review areas to be repointed prior to beginning. Areas not agreed to by the Engineer and Contractor prior to repointing will not be considered for compensation.
- T. Repoint mortar joints and repair masonry only when air temperature is between 40- and 90-degrees F (4 and 32 degrees C) and is predicted to remain so for at least 7 days after completion of work.
- U. Cold Weather Application - (Applies only to rebuilding, no repointing shall be completed when air temperature is less than 40 F) The Contractor shall comply with the following cold weather masonry construction requirements at no change in contract price:
  - 1. The cold weather construction and protection requirements shall be closely followed.
  - 2. Construction materials shall be received, stored, and protected in ways that prevent water from entering the materials.
  - 3. If climatic conditions warrant, temperatures of construction materials should be measured. Frozen sand and wet masonry units must be thawed. Masonry units below 20 F must be heated above 20 F without overheating.
  - 4. Sufficient mortar ingredients should be heated to produce mortar temperatures between 40 F and 120 F. Every effort should be made to produce consecutive batches of mortar with the same temperatures falling within this range. The mortar temperature after mixing and before use should be above 40 F, maintainable either by auxiliary heaters under the mortarboard or by more frequent mixing of mortar batches. Heated mortar on mortarboards should not become excessively hot (greater than 120 F).
  - 5. During below-normal temperatures, masonry should be placed only on sound unfrozen foundations. Masonry should never be placed on a snow or ice-covered surface, because of the danger of movement when the base thaws and the possibility of very little bond being developed between the mortar and the supporting surface.

6. At the end of the day, the top surface of all masonry should be protected to prevent moisture, as rain, snow or sleet, from entering the masonry. This protection must cover the top surface and should extend a minimum of 2 feet down all sides of the masonry.

<u>WORK DAY TEMPERATURE</u>	<u>CONSTRUCTION REQUIREMENT</u>	<u>PROTECTION REQUIREMENT</u>
Above 40 F	<b>Normal masonry procedures.</b>	<i>Cover walls with plastic or canvas at end of work day to prevent water entering masonry.</i>
40 F – 32 F	<b>Heat mixing water to produce mortar temperatures between 40 F – 120 F.</b>	<i>Cover walls and materials to prevent wetting and freezing. Covers should be plastic or canvas.</i>
32 F – 25 F	<b>Heat mixing water and sand to produce mortar temperatures between 40 F – 120 F.</b>	<i>With wind velocities over 15 mph provide windbreaks during day and cover walls and materials at the end of the work day to prevent wetting and freezing.</i>
25 F – 20 F	<b>Mortar on boards should be maintained above 40 F.</b>	<i>Maintain masonry above freezing for 16 hours using auxiliary heat or insulated blankets.</i>
20 F – 0 F and below	<b>Heat mixing water and sand to produce mortar temperatures between 40 F – 120 F.</b>	<i>Provide enclosures and supply sufficient heat to maintain masonry enclosure above 32 F for 24 hours.</i>

Note: Construction requirements, while work is in progress, are based on *ambient* temperatures. Protections requirements, after masonry is placed, are based on *mean* daily temperatures.

7. Hot Weather Application - The Contractor shall keep the areas being built sufficiently moist at all times during the operations. Mortar mixed and ready for application shall be used within one hour's time and continually remixed to prevent excessive evaporation of moisture from the mortar. Discard all mortar, which has begun to set or is not used within two hours' time. Water for tempering shall be available at all times.
- V. All areas of existing brick masonry or flashings removed shall be replaced or made secure and weather tight during the same day. No building interiors, whether new or existing shall be left exposed to the weather at the end of each workday.
- W. Fully charged, inspected and approved fire extinguishers shall be on site at all times. No cutting, grinding or welding of any kind shall proceed without an approved fully charged fire extinguisher.
- X. The general nature, approximate quantity and surface area of the various work items are shown on the Contract Drawings.

1.05 SUBMITTALS

- A. Submittals shall be made in accordance with the General Conditions and Divisions 0/1.
- B. The Contractor shall submit the following procedural items with their submittal package:
  - 1. Staging/set-up procedures;
  - 2. Program for containment of cleaning materials;
  - 3. Program for containment of dust; and
- C. Submit miscellaneous masonry materials, including product data, certifications, and samples of each type product included in the masonry assemblies, including Type N and S mortar mix and anchors.
- D. Submit certification that aggregates, fine and coarse, for masonry mortar comply with specified mortar mix requirements including void ratio, color, size, and grading requirements.
  - 1. Submit aggregate sample.
- E. Protect persons and property. Submit proposed method of protection for adjacent building, landscaping, pavement, walkways, site plantings, and related site work from damage.
- F. Submit drawings and written description of shoring procedures masonry rebuilding work, including extent of removals and method of support, to the Engineer.
  - 1. Submit shoring procedures with the seal of a licensed Professional Engineer registered in the state of the project who has reviewed the drawings and written description.
- G. Submit written description of removal procedures and operations sequencing to the Engineer prior to commencement of Work.
- H. Submit brick samples: provide six replacement brick units showing complete range of color. Original brick samples taken from the building for matching purposes shall be washed with the specified cleaning products and procedures prior to being shipped to custom brick manufacturer for matching. New bricks shall match the color, texture and size of existing cleaned brick.
- I. Submit shop drawing indicating size, shape, and profile of replacement brick types.
- J. Proposed method of providing a dust proof site (dust removal) during masonry demolition work.
- K. Proposed method of protection for adjacent building, pavement, walkways, and related sitework from damage.

- L. Submit technical data sheet on each of the products included in Part II of this section. If not listed, submit data sheet on materials intended for use.
- M. Full size samples of brick paving units shall be submitted to indicate Color and Shape selections. Color will be selected by Architect/engineer/Landscape Architect/Owner from Pine Hall's available colors.
- N. Sieve analyses for grading of bedding and joint sand shall be submitted.
- O. Test results shall be submitted from an independent testing laboratory for compliance of brick unit requirement to ASTM C902 or other applicable requirements.
- P. The layout, pattern, and relationship of paving joints to fixtures and project formed details shall be indicated.

#### 1.06 UNIT PRICE WORK

- A. The Unit Prices are above and beyond those shown on the Contract Drawings, and shall be carried by the Contractor within the Base Bid Scope of Work. Unit prices for certain work of this Section are listed in Section 01 20 00 – Contract Considerations, Paragraph 1.4 Unit Prices that precedes the technical specifications. The Contractor and Engineer shall verify the actual quantities used.
- B. Carry a total of 100 replacement brick units for all elevations, to replace spalled or cracked brick not salvageable for reuse.
- C. For cutting and repointing of deteriorated masonry, the Base Bid shall include all labor, access, materials, and accessories required for the proper installation. The current quantity of deteriorated masonry is unknown. The base bid shall include **300** square feet of repointing.
- D. For masonry rebuilding, the Base Bid shall include all labor, access, materials, and accessories required for the proper installation. The current quantity of masonry rebuilding is unknown. The base bid shall include **50** square feet of rebuilding.

#### 1.07 REFERENCE STANDARDS

- A. ASTM C144 Specification for Aggregate for Masonry Mortar
- B. ASTM C150 Specification for Portland Cement
- C. ASTM C207 Specification for Hydrated Lime for Masonry Purposes
- D. ASTM C270 Standard Specification for Mortar for Unit Masonry
- E. ASTM C67 Test Methods of Sampling and Testing Brick and Structural Clay Tile
- F. ASTM C114 Test Methods for Chemical Analysis of Hydraulic Cement

- G. ASTM C62 Specification for Building Brick (Solid Masonry Units made from Clay or Shale)
- H. ASTM C216 Specification for Facing Brick (Solid Masonry Units made from Clay or Shale)
- I. ASTM C476 Specification for Grout for Masonry
- J. ASTM C90 Specification for Loadbearing Concrete Masonry Units
- K. ASTM C92 Specifications for Pedestrian and Light Traffic Paving Brick.
- L. ASTM D2940 Graded Aggregate Material for Bases or Subbases for Highways or Airports.
- M. BIA (Brick Industry Association) Technical Notes

#### 1.08 ROOF AND BUILDING PROTECTION

- A. Protect the building and grounds from undue damage.
- B. Masonry work including cleaning shall be performed prior to replacement of the roofing beneath.
- C. The existing roof and building systems adjacent and below masonry repair areas shall be completely protected during the restoration work. The Contractor is responsible prompt repair of damages to the existing building systems at no additional cost to the Owner.
- D. Provide 1" minimum thick polyisocyanurate insulation, ballasted with plywood and sufficient supports to resist uplift, over the existing roof membrane to reduce the potential of abrasions and damage. Protection shall extend a minimum of 6' from building wall or extent of work.
- E. Temporary window protection in the form of plywood and polyethylene sheeting shall be provided at all times during masonry washing, demolition, or other activities adjacent to the existing building assemblies, but especially at windows.

#### 1.09 DIMENSIONS AND QUANTITIES

- A. All dimensions and quantities shall be determined or verified by the Contractor. The Contract Drawings have been compiled from various sources and may not reflect the actual condition at the time of construction. The Contractor is advised to take all precautions and make all investigations necessary to install the proposed work. The Owner will not consider unfamiliarity with the job conditions as a basis for additional compensation.



#### 1.10 QUALITY ASSURANCE

- A. The Contractor shall utilize skilled and experience specialty workers. Masonry foreman shall have a minimum of ten years' experience in masonry restoration. Qualified masons shall have a minimum of five years' experience in masonry restoration to perform the work, in accordance with requirements listed herein. Experienced trade workers shall be utilized for all aspects of the masonry work, except as follows:
  - 1. Mason's apprentices shall have a minimum of two years' experience in masonry restoration to perform the work of assisting masons. Apprentices shall not be allowed to perform work involving disassembly or rebuilding of masonry without direct supervision of a qualified mason.
  - 2. Laborers shall have a minimum of one years' experience in masonry restoration to perform the work of assistance to the mason team. Laborers shall be prohibited from performing skilled work on the building or preparing masonry materials.
- B. Contractor to submit in-depth outline of each worker's training and experience, along with a list of projects performed in the previous five years.
  - 1. Contactor shall demonstrate a proven track record of success, experience, and skill with production, preparation, and curing of mortars.
- C. Paver installation shall be by a contractor and crew with at least five years of experience in placing brick pavers on projects of similar nature or dollar cost.
- D. Owner reserves the right to reject any contractor personnel, which they consider to be inexperienced.

#### 1.11 TEST AREAS

- A. Before full-scale work is commenced and separate from any unit price quantities, execute the following work for trial work areas to be reviewed by the A/E, Owner, and/or CA as to acceptability of color, texture and appearance match with the existing construction. Test areas shall be performed at a location on the building accessible to the Owner and be subject to approval.
  - 1. 5 square feet of brick masonry rebuilding.
  - 2. 10 square feet of brick masonry repointing.
  - 3. Brick veneer cleaning
- B. Prepare, install and cure all materials in accordance with these specifications and the manufacturer's instructions.
- C. Trial areas shall be repeated until acceptable results are obtained. The accepted work shall be a standard for all subsequent work. Areas of masonry repointing and replacement shall be allowed to weather for seven days and washed prior to review by A/E, Owner, and/or CA.

#### 1.12 DELIVERY, STORAGE, AND HANDLING

- A. Brick pavers shall be delivered to the site in steel banded, plastic banded, or plastic wrapped cubes capable of transfer by fork lift or clamp lift. The pavers shall be unloaded at the job site in such a manner that no damage occurs to the product.
- B. Bedding and joint sand shall be covered with a secure waterproof covering to prevent exposure to rainfall or removal by wind.
- C. Delivery and paving schedules shall be coordinated in order to minimize interference with normal use of the buildings adjacent to paving.

#### 1.13 ENVIRONMENTAL CONDITIONS

- A. Do not install sand or pavers during heavy rain or snowfall.
- B. Do not install sand and pavers over frozen base materials.
- C. Do not install frozen sand.

#### 1.14 CLEAN-UP

- A. Site clean-up shall be complete and performed daily to the satisfaction of the Owner.
- B. All roof, building (interior and exterior), landscape, and parking areas shall be cleaned of all trash associated with masonry repairs, debris, and dirt caused by, or associated with, the work.
- C. All trash and debris shall be completely removed from the site daily during the work and at the completion of the work. All debris shall be legally disposed of off-site.

#### 1.15 GUARANTEES

- A. Upon completion of the work, and prior to final payment, the Contractor shall submit a Guarantee of his work to be free from defect in materials and workmanship. This Guarantee shall be for a period of three (3) years from the date of Substantial Completion and shall be signed by a Principal of the Contractor's firm and sealed if a corporation.

### PART 2 - MATERIALS

#### 2.01 SALVAGED MATERIALS AND ITEMS

- A. All building materials, equipment, and debris of whatever nature from the portions of the existing structure removed under this project and not designated to be

reused or reinstalled shall become the property of the Contractor and legally disposed of off-site.

## 2.02 BRICK MASONRY UNITS AND ACCESSORIES

- A. Bricks: Brick shall be of the same size, texture, and color as the existing brick, as accepted by the A/E, Owner, and/or CA. Brick will conform to ASTM C216, Grade SW, and Type FBS. Brick masonry dimensions vary slightly; however, they are typically 2-1/4" x 3-5/8" x 8". These units vary and will require confirmation prior to ordering.
- B. All brick shall be submitted to the A/E, Owner, and/or CA for acceptability as to color and appearance match to with the existing brick. The Contractor may be required to submit additional brick samples for approval. No brick shall be purchased or installed until approval by the A/E, Owner, and/or CA is obtained.
- C. Bricks for use as pavers shall be pedestrian grade conforming to ASTM C902.

## 2.03 MORTAR

- A. The following constituents and minimum standards for a Type N mortar shall be maintained unless otherwise accepted by the Engineer.
  - 1. Portland cement shall be Type I or II conforming to ASTM C150.
  - 2. Hydrated lime shall conform to ASTM C207, Type S specifications.
  - 3. Sand shall conform to ASTM C144, amended as follows:

<b>Sieve Size</b>	<b>Percent Passing (By Weight)</b>
No. 4	100
No. 8	95-100
No. 16	70-100
No. 30	40-75
No. 50	20-40
No. 100	10-25
No. 200	0-10

- 4. Aggregate: ASTM C144. All aggregate use in the Work shall be from the same source in order to produce mortar of uniform color throughout the Work.
  - a. Aggregate for use in any mortar joint less than 1/4" wide shall comply with ASTM C144 with the further limitation that all aggregate shall pass a #16 sieve.
  - b. Aggregate for use in the new mortar shall match the original mortar sand in color, texture, and size. Match existing sand type, color and gradation.
- 5. Tinting or coloring agent shall be added to the sand, lime, and cement to color the fully cured, in-place mortar to match the existing texture and color. The A/E will approve the final color of mortar.

6. Admixtures - No admixtures shall be allowed unless submitted for review to the Engineer.
7. Water shall be clean, potable tap water.

B. Provide Type N mortar for masonry assembly rebuilding and repointing.

#### 2.04 THROUGH WALL FLASHING AND ACCESSORIES

- A. Coordinate the masonry through wall, fabric, and pan flashings with specification 07 62 00 – Sheet Metal and Flashing.

#### 2.05 CEMENTITIOUS GROUT

- A. Non-shrink, non-metallic, fine-course, self-compacting cementitious grout capable of application with various viscosities from hand pack to fully fluid, such as:
1. Spec Mix
  2. Amerimix
  3. ChemMasters
- B. Grout should be certified to meet ASTM C476 proportion and property requirements for core fill grout.
- C. Compression strength at 28 days to achieve a maximum of 2,500 psi.

#### 2.06 WEEP VENTS

- A. Masonry weep baffles to be installed in full head joint weeps of brick masonry shall be 3/8" x 2-1/2" x 3-3/8" baffle such as Wire Bond – Cell Vent No. 3601 as manufactured by Masonry Reinforcing Corporation of America, Quadro-Vent by Hohmann & Barnard, Inc., Cell Vent No. D/A 1006 as manufactured by Dur-O-Wal or approved equal.

#### 2.07 MASONRY CLEANERS

- A. Pre-cleaners to be used to remove tough deposits of rust staining, carbon staining, and algae shall be a non-acidic or other suitable liquid specifically formulated for cleaning of heavily soiled historic brick masonry surfaces.
- B. Cleaner for newly installed brick masonry shall be as follows:
1. Sure-Kleen 101 lime solvent by Prosoco, Inc.
  2. Hydroclean HT 455 by Hydrochemical Techniques, Inc.
  3. #200 Lime Solvent as manufactured by Diedrich Technologies
- Or an approved equal. The cleaner shall be specifically recommended by the manufacturers for the removal of stains and efflorescence from historic brick masonry.
- C. Restoration cleaner for newly repointed areas on existing brick shall be furnished by the same manufacturer as listed and approved in item B above and shall be non-acidic.

- D. Masking materials shall be commercially available masking or duct tape of appropriate width. Self-adhesive materials shall be completely strippable, leaving no adhesive residue when removed.
- E. Plastic sheet for masking tape areas shall be 4 mil. thick minimum polyethylene sheet of appropriate size to cover the required areas.

## 2.08 BRICK ACCESSORIES

- A. Modified Bitumen Membrane: ASTM D 1970, 60 mil thick minimum with 4 mil, high-density polyethylene film and release paper backing formulated for high temperature installation.
- B. Termination Bar: copper, brass, or stainless steel shall be 1/8" x 1" with pre-punched fastener holes spaced at no more than 8" on-center. Fasteners are to be Series 300 stainless steel.
- C. Fasteners for securing brick masonry ties shall be 1/4"-diameter hammer drive anchors with zinc sheaths, stainless steel pin, and flat heads such as Zamac Nailins by Rawl, HIT anchor by Hilti, Masonry Anchor by Olympic Fasteners. Anchors shall penetrate the substrate 1-1/2" minimum. As an alternate to hammer drive pins, masonry screws of #12 or larger will be considered if submitted.

## 2.09 MASONRY REINFORCEMENT

- A. Anchors for tieback of new exterior wythes of masonry to existing brick back up material shall be stainless steel.
  - 1. Acceptable Manufacturers
    - a. *Dur-O-Wal*
    - b. *Heckmann Building Products*
    - c. *Hohmann & Barnard*
  - 2. Type: Corrugated Buck anchors
  - 3. Fasteners for use with masonry anchors shall be stainless steel, pan head masonry screws long enough to penetrate sound substrate 1.5 inches.
  - 4. Gage: 16-ga
- B. Truss style wire reinforcing for installation at rebuilt portions of multi-wythe brick masonry shall be stainless steel ASTM A580 Type 304.
  - 1. Acceptable Manufacturers are as listed in paragraph 2.03 A1 above.
  - 2. Type: Conforming to ASTM A 951 joint reinforcement for masonry structures.
  - 3. Wire Size: standard weight of 9 gauge (.148" or W1.7 sized wire).
  - 4. Width: sized to provide edge clearance as noted on Detail Drawings.

## 2.10 SEALANT AND ACCESSORIES

- A. Sealant for exposed locations shall be a two-part urethane conforming to ASTM C 920, Type M, Grade NS, Class 25, Uses NT, M, A, and O, such as:
  - 1. NP-II by Sonneborne
  - 2. Dymeric 240 as manufactured by Tremco
  - 3. Dynatrol II by Pecora.
- B. Sealant for hidden locations shall be a one (1) component urethane conforming to ASTM C 920, Type M, Grade NS, such as:
  - 1. NP1 by Sonneborne
  - 2. Dymonic 100 by Tremco
  - 3. Dynatrol 1-XL by Pecora.
- C. Backer rod shall be continuous length, close-cell polyethylene foam, as recommended by the sealant manufacturer. Backer rod shall be compressible, resilient, non-waxing, non-extruding, and non-staining. Backer rod shall be of sufficient size to be compressed 30% of maximum joint width and shall be totally compatible with the sealant, primer, and substrates. Backers shall conform to the requirements of ASTM C 962, Type A.

## 2.11 BRICK PAVERS

- A. Product name(s)/shape(s), color(s), overall dimensions, and thickness of the paver(s) specified as follows:
  - 1. Product Name: Classic Square Edge Pathway Pavers, Full Range (color samples to be approved by Owner) manufactured by Pine Hall Brick, 2701 Shorefair Drive, Winston-Salem, North Carolina, 27105, or approved equal.
  - 2. Product Shape(s): 2.25-inch thick x 4-inch wide x 8-inch long
  - 3. Product Color(s): Full Range (color samples to be approved by Owner)
- B. Pavers shall meet the minimum material and physical properties set forth in ASTM C902, Standard Specification for Pedestrian and Light Traffic Paving Brick.
- C. Pigment in brick pavers shall be consistent with color specified in Section 2.01 and mock-up approved by Owner.

## 2.12 GRANULAR BASE

- A. Shall be 8-inches thick and comply with the requirements for Dense Graded Crushed Stone. The gradation requirements for Dense-graded Crushed Stone for Subbase are as follows:

<b>Sieve Size</b>	<b>Percent Passing (By Weight)</b>
2 inch	100
1-1/2 inch	70-100
3/4 inch	50-85
No. 4	30-55
No. 50	8-24
No. 200	3-10

### 2.13 BEDDING SAND

- A. The bedding sand shall be clean, non-plastic, and free from deleterious or foreign matter. It can be natural or manufactured from crushed rock. Do not use limestone screenings or stone dust that do not conform to the grading requirements in Table 3. When brick pavers are subject to vehicular traffic, the sands shall be as hard as practically available.
- B. The bedding sand shall conform to the grading requirements of ASTM C33 as follows.

<b>Sieve Size</b>	<b>Percent Passing (By Weight)</b>
3/8 inch	100
No. 4	95-100
No. 8	85-100
No. 16	50-85
No. 30	25-60
No. 50	10-30
No. 100	2-10

### 2.14 POLYMERIC JOINT SAND

- A. Polymeric Joint Sand shall be a clean, dry mix of sand and polymeric binding agent activated by water manufactured for the use in joints 1/8 inch to 1 inch wide. Sand shall comply with ASTM c-144.

### PART 3 – EXECUTION

#### 3.01 GENERAL WORKMANSHIP

- A. Follow all applicable local, state, and federal requirements regarding construction of scaffolding and protection of the public safety. Specific reference should be made to OSHA Construction Safety Regulations.
- B. Set up of scaffolding or similar access and location of on-site storage areas shall be subject to review and approval by the Owner.
- C. Do not leave any partially completed sections exposed to the elements overnight. Provide all devices (including heaters and insulation) necessary to maintain areas at the correct temperature and humidity for proper curing of mortar.
- D. During freezing weather, the Contractor shall protect all masonry with tarpaulins or other approved material. Masonry materials shall be stacked on platforms and covered, or stored in a manner acceptable to the Owner, to protect them from contact with soil and weather exposure. Materials with stained faces will not be used in the walls.
- E. No masonry work shall be executed when the temperature in the work area has dropped below 40 F unless it is rising. The Contractor shall provide heat and maintain the temperature of masonry materials and protect the completed work from freezing. Protection shall consist of heating and maintaining the temperature of masonry materials to at least 40 F, but not more than 100 F, and maintain an air temperature above 40 F on both sides of completed masonry for a period of at least 72 hours.
- F. Keep covers tightly sealed on all evaporative products to prevent premature curing.
- G. Masonry work including cleaning shall be performed prior to replacement of the roofing beneath. The entire roof adjacent to masonry work must be protected with 1/2" minimum rigid insulation with plywood atop.
- H. All debris shall be transported to dumpsters, in locations approved by the Owner, at ground level by enclosed chute or crane and scaling bucket. Uncontrolled dropping of debris to ground level will not be permitted.
- I. During the removal of any existing component, the Contractor shall report to the A/E, Owner, and/or CA any areas of damaged, deteriorated, or otherwise unsuitable framing, wood blocking, or wall materials uncovered during the work. Do not cover unacceptable areas until reviewed by the A/E, Owner, and/or CA. Provide temporary protection to the area in question.
- J. The Contractor shall lay-up replacement brick masonry units' plumb, level, and true to the lines and dimensions at the existing walls. Chipped or broken units shall not be used. If any such units are placed in the finished wall, they shall be removed and replaced with new units at no additional cost to the Owner.



- K. Refer to Brick Industry Association (BIA) technical notes for standard practice for masonry repointing, rebuilding and repair.

### 3.02 REMOVALS - BRICK

- A. Whenever practical, removals made adjacent to brick to remain shall be racked back, not toothed.
- B. Thoroughly clean out all loose brick or mortar particles, sand, dust, and other deleterious materials.
  - 1. All mortar shall be removed from the ends, tops, and bottoms of brick intended to remain.
- C. Do not damage existing flashing or other materials intended to remain.
- D. Report unsuitable or otherwise damaged back up masonry substrates to Engineer prior to proceeding with work.
- E. Remove masonry units in the locations shown in the Contract Documents. Use hand and power tools to remove masonry. Pneumatic demolition tools are not permitted.
- F. Remove maximum four (4) linear foot sections of masonry at a time, or as required to prevent deflection or displacement of the existing masonry to remain. Shore the sections as required to prevent displacement.
- G. Saw-cut surrounding mortar joints and remove the designated masonry units. Remove adjacent units as required. Provide temporary shoring and protection as necessary. Use Vacuum Equipment to minimize dust generation. Do not use water to avoid creating a slurry and possible staining.
- H. Remove masonry units in a manner so as not to damage sound materials designated to remain. The Contractor shall note that the Base Bid work will require removal and replacement of brick masonry veneer while maintaining brick masonry veneer above. The Contractor shall provide sufficient shoring. Contractor is responsible for cleaning to original conduits.

### 3.03 MORTAR REMOVALS AND REPOINTING OF EXISTING JOINTS

- A. Cut out existing mortar joints to sound existing mortar or to a minimum depth of 1", or 2.5 x the width of joint, whichever is greatest.
- B. Remove mortar at vertical joints using hand tools prior to cutting horizontal joints.
- C. Use grinding wheels or saws at horizontal joints. Chisel fillets of mortar left from the blade's curve.
  - 1. Do not damage masonry units or flashings. The use of guides or jigs is permitted.

- D. During removals, controlled dampening to reduce dust generation and airborne particulate matter will be permitted and is mandatory.
- E. After mortar removals are complete, thoroughly clean out all loose particles, sand, dust, and the like using fiber brushes and compressed air.
- F. Completely wet the cut masonry joint with a tank sprayer pressurized with a hand pump. Remove any standing water with a blast of compressed air.
- G. Point the joints solid to the full depth of the joint using a tuck-pointing trowel or jointing tool.
  - 1. At joints less than 1/8"-wide, bag inject mortar into joint.
  - 2. Mortar to extend the full depth of the face brick at vertical joints where no existing mortar is present.
- H. Dress the joint to a concave profile to match existing.

### 3.04 SHORING

- A. It is the responsibility of the Contractor to design and carry out shoring procedures sufficient to comply with applicable regulations, securely support all masonry or other elements left unsupported by the required removals, and permit the work of other trades to proceed.
  - 1. Ensure that shoring procedures are submitted to the Engineer in advance of the masonry work.
  - 2. All shoring of the brick masonry components will be the responsibility, of the Contractor. Maximum spacing of temporary shoring shall be 12" on center or as per the engineered shoring design. Any damage as a result of insufficient shoring shall be repaired or replaced at no additional cost to the Owner. Contractor shall submit an Engineer stamped shoring plan to the A/E, Owner, and/or CA prior to commencement of masonry removals.
  - 3. If cracks occur in mortar joints of brick intended to remain, remove, and rebuild masonry.
  - 4. Point all holes left in mortar by withdrawal of shore fastenings.
  - 5. Completely remove shoring system when no longer needed.
  - 6. Notify the A/E, Owner, and/or CA 48 hours in advance of installation of shoring.
  - 7. Ensure that shoring complies with submittal bearing the seal of licensed Professional Engineer as specified above.

### 3.05 MORTAR

- A. Store cementitious materials in such a manner as to prevent deterioration or the intrusion of foreign material.
- B. Mortar proportions shall be determined per ASTM C 270.
- C. Mortar may be mixed by hand or rotary mixing machine. Empty mortar container and clean out moist or loose dry mortar before charging.

1. Accurately measure, **by volume**, all materials before their introduction into the container. Measurement by shovelfuls is not acceptable.
2. Mortar mixing procedure:
  - a. Follow cold weather procedures as per the parameters established within this specification.
  - b. Do not vary constituents from those specified in the custom mortar mix.

### 3.06 MASONRY SETTING - BRICK

- A. For brick with an initial rate of absorption (per ASTM C67) in excess of 30 mg/30 sq. in./min.: soak brick with water 24 hours prior to use so that they are saturated, surface dry. In hot, dry weather drench brick 3 hours prior to use.
- B. Lay all masonry true to line and dimensions, plumb and square, following existing coursings as closely as practicable.
  1. Hot Weather (as defined in Part 1 above): Spread mortar beds not more than 4 feet ahead of masonry units. Lay masonry unit within 1 minute of spreading mortar. Protect mortar in tubs from the effects of wind and temperature. Do not allow mortar temperature to exceed 120 F.
- C. For courses of new brick: do not furrow bed joints. Butter ends of brick with sufficient mortar to fill the head joints.
  1. Shove mortar beds and heads to level units in true alignment with the course plane and to eliminate any front-to-rear bevel.
  2. Equalize horizontal and vertical joints.
  3. Place brick in correct alignment; do not move brick after mortar has achieved initial set. Remove and rebuild with new mortar if initial set is interrupted.
- D. For courses of new brick adjacent to existing brick above: at the top course of new work, do not apply mortar to the brick unit to be set. Mortar the underside of the existing course above, and the top and ends of brick already in place.
  1. Add, by pointing, additional mortar as required to develop fully packed bed, head, and vertical joints.
- E. Tool joints when mortar is "thumb-print hard", or, alternatively, when sufficient water has left the mortar to allow tooling without bringing excessive paste to the surface.
  1. Tool the joints, by hard shoving, to a covered joint edging the brick either side of the joint.
- F. Visually inspect the Work and correct items not conforming to the Contract Documents, including cutting out and pointing all defective mortar joints. Ensure that weep holes or weep tubes are not plugged.
- G. Profile of finished brick masonry joints shall closely match that of surrounding weathered brick mortar joints.

### 3.07 REBUILDING OF BRICKWORK

- A. Rebuild all brickwork, where indicated on drawings and when removed for repairs, and replace to the original profile and configuration.
- B. Clean all existing mortar from brick masonry units adjacent to those removed and from any to be re-used.
- B. Provide all shoring and bracing as required during rebuilding operations.
- C. Wet all new and existing brick units in the work area. Bricks shall be kept damp but without standing water.
- D. Install all brick masonry units in full beds of mortar at the top and bottom. Fully butter all heads. Use slate wedges as required to maintain consistent mortar joint widths.
- E. Place horizontal truss-style joint reinforcement 16 inches on center, max. with cross rods spaced at 24-inches on center max.

### 3.08 SEALANT JOINT PREPARATION

- A. Clean all substrates to receive the joint sealants using the manufacturer's recommended cleaners and surface preparation techniques.
- B. Grind masonry surfaces of existing sealant residue. Remove mortar from control joint to allow unrestricted veneer movement.
- C. Clean each previously prepared bonding surface with applications of the manufacturer's recommended solvent and clean white rags. Apply solvent by brush and wipe surfaces clean. Repeat a minimum of 2 times, more often if necessary.
- D. Joint primer shall be applied to properly prepared, cleaned, and dry substrates. Primer shall be recommended and approved by the sealant manufacturer for each substrate and shall be completely compatible with the existing materials and proposed sealants and accessories.
- E. Primer shall be applied and allowed to dry prior to the application of joint backer, bond breaker, or sealant.

### 3.09 BACKER ROD AND BOND BREAKER TAPE

- A. Joint backer rods shall be installed in all joints to ensure the proper width to depth ratios required by the sealant manufacturers.
- B. Joint backer rods shall be installed with approximately 30% compression at 70° F. Do not twist, tear, or puncture joint backing. Butt joint backings tightly at intersections.

- C. Joint backing shall be installed at locations where backer rod cannot be utilized to achieve the designated joint depth.
- D. Bond breaker tape shall be installed at locations where backer rod cannot be utilized to achieve the designated joint depth.
- E. Sealant shall adhere only to the sides of the joint and not to the back so as to eliminate three-sided adhesion. All sealant joints shall be installed in accordance with the manufacturer's width-to-depth ratio requirements.

### 3.10 SEALANT

- A. All sealant shall be applied to clean, dry joints by knife, trowel, manual or air pressure caulking guns using proper nozzle sizes.
- B. Sealant shall be forced into the joint to completely fill the void. Force sealant into the joint and against the sides of the joint. Avoid pulling sealant from sides.
- C. Tool sealant to be straight, uniform, smooth, and neatly finished to the profiles detailed. No soaps, wetting, or slicking agents will be allowed.
- D. At partial depth horizontal sealant joints adjust sealant joint profile to match existing conditions. Vary depth and width as required to maintain the manufacturer's recommended width to depth ratios. Tool sealant to shed water.

### 3.11 EXAMINATION BEFORE PAVING

- A. Verify that subgrade preparation, compacted density and elevations conform to the specifications. Compaction of the soil subgrade shall be at least 95% Standard Proctor Density per ASTM D 1557. Stabilization of the subgrade and/or base material may be necessary with weak or saturated subgrade soils. The Contractor shall conduct density tests for conformance to specifications and shall alert the engineer if weak or saturate soils exist.
- B. Verify that geotextiles, if applicable, have been placed according to specifications and drawings.
- C. Verify that aggregate base materials, thickness, compaction, surface tolerances and elevations conform to the specifications.

The aggregate base should be spread and compacted in uniform layers not exceeding 6 in. (150 mm) thickness. Base surface tolerance should be plus or minus 3/8 in. (10 mm) over a 10 ft. (3 m) straight edge. The Architect/Engineer should inspect geotextile materials and placement (if applicable), base preparation, surface tolerances, elevations, and conduct density tests for conformance to specifications.

Mechanical tampers (jumping jacks) are recommended for compaction of soil subgrade and aggregate base around lamp standards, utility structures, building edges, curbs,

tree wells and other protrusions. Areas not accessible to roller compaction equipment should be compacted to the specified density with mechanical tampers. CAUTION - Care shall be taken around the perimeters of excavations, buildings, curbs, etc. These areas are especially prone to consolidation and settlement. Wedges of backfill should not be placed in these areas. If possible, backfilling and compacting in these areas particularly should proceed in shallow lifts, parallel to the finished surface.

- D. Verify the proper installation of the curbing, in terms of location, elevation, and adherence to the specifications.
- E. Verify that the base is dry, uniform, even and ready to support sand, pavers and imposed loads.
- F. Beginning of bedding sand and paver installation shall signify acceptance of base.

### 3.12 SITE PREPARATION FOR PAVING

- A. The site must be stripped of all topsoil and other objectionable materials to the grades specified.
- B. All subdrainage of underground services within the pavement area must be completed in conjunction with subgrade preparation, and before the commencement of subbase construction.
- C. After trimming to the grades specified, the pavement is to be proof rolled to 95 percent Standard Proctor Density, with soft spots or localized pockets of objectionable material excavated and properly replaced with approved granular material.
- D. The subgrade shall be trimmed to within 0 to ½ in. of the specified grades. The surface of the prepared subgrade shall not deviate by more than 3/8 in. (10mm) from the bottom edge of a 39 in. (1m) straight edge laid in any direction.
- E. The Contractor shall ensure that the prepared subgrade is protected from damage from inundation by surface water. No traffic shall be allowed to cross the prepared subgrade. Repair of any damage resulting shall be the responsibility of the Contractor and shall be repaired.
- F. Under no circumstances shall further pavement construction proceed until the subgrade has been inspected by the Owner or the Consultant.

### 3.13 GRANULAR SUBBASE AND BASE INSTALLATION

- A. The subbase shall be placed in uniform lifts not exceeding 6 in., (150 mm) loose thickness and compacted to at least 95 percent Standard Proctor Density as per ASTM D 698.

- B. Aggregate base shall be placed in uniform lifts not exceeding 6 in. (150 mm) loose thickness. Each lift shall be compacted to at least 95 percent Standard Proctor Maximum Dry Density.
- C. The granular base shall be trimmed to within 0 to 3/8 in. (0 to 10 mm) of the specified grade. The surface of the prepared base shall not deviate by more than 3/8 in. (10 mm) from the bottom edge of a 10 ft. (3 m) long straight edge laid in any direction.
- D. The upper surface of the base shall be sufficiently well graded and compacted to prevent infiltration of the bedding sand into the base both during construction and throughout its service life. Segregated areas of the granular base shall be blended by the application of crushed fines that have been watered and compacted into the surface.
- E. Before commencing the placing of the sand bedding course and the placement of the brick pavers, the base shall be inspected by the Owner or the Consultant.

### 3.14 PAVER INSTALLATION

- A. Spread the bedding sand evenly over the base course and screed to a nominal 1 in. (25 mm) thickness, not exceeding 1-1/2 inch (40 mm) thickness. The screeded sand should not be disturbed. Sufficient sand shall be placed in order to stay ahead of the laid pavers. Do not use the bedding sand to fill depressions in the base surface.

The spread sand shall be carefully maintained in a loose condition, and protected against incidental compaction, both prior to and following screeding. Any incidentally compacted sand or screeded sand left overnight, shall be loosened before further paving units are placed. Sand shall be lightly screeded in a loose condition to the predetermined depth, only slightly ahead of the paving units. Under no circumstances shall the sand be screeded in advance of the laying face to an extent to which paving will not be complete on that day.

Screed sand shall be fully protected against incidental compaction, including compaction by rain. Any screeded sand, which is incidentally compacted prior to laying of the paving unit, shall be removed and brought back to profile in a loose condition. Neither pedestrian nor vehicular traffic shall be permitted on the screeded sand.

- B. Pavers shall be clean and completely free of foreign material before installation.
- C. Pavers shall be inspected for color distribution and all chipped, damaged or discolored pavers shall be replaced.
- D. Paving units shall be installed from a minimum of 3 bundles simultaneously drawing the paver vertically rather than horizontally. (Color variation occurs with all brick products. This phenomenon is influenced by a variety of factors, e.g. moisture content, curing conditions, different aggregates and, most commonly,

from different production runs.) By installing from a minimum of three bundles simultaneously, variation in color is dispersed and blended throughout the project.

- E. The pavers shall be laid in the pattern(s) as shown on the drawings. String lines or chalk lines on bedding sand should be used as necessary to hold all pattern lines true.
- F. Joints between the pavers on average shall be between 1/16 in. and 1/8 in. (2 mm to 4 mm) wide. In order to maintain the desired pattern, joint spacing must be consistent.
- G. Gaps at the edges of the paved area shall be filled with cut pavers.
- H. Pavers to be placed along the edge shall be cut with a double blade paver splitter or masonry saw.
- I. Upon completion of cutting, the area must be swept clean of all debris to facilitate inspection and to ensure pavers are not damaged during compaction. (Debris or sand particles left on pavers which are being compacted can cause point loading which may chip, scrape or break the paver.)
- J. After sweeping and prior to compaction, the paved area must be inspected by the owner or consultant to ensure satisfactory color blending. Pavers can be moved easily at this time to achieve good color distribution.
- K. Low amplitude, high frequency plate compactor shall be used to compact the pavers into the sand. The compactor shall transmit an effective force not less than 75 kN per square metre (1600 Lb/ft<sup>2</sup>) of plate area. The frequency of vibration shall be within the range of 75 to 100 Hz.
- L. The pavers shall be compacted to achieve consolidation of the sand bedding and brought to level and profile by not less than three passes. Initial compaction should proceed as closely as possible following the installation of the paving units and prior to the acceptance of any traffic or application of sweeping sand.
- M. Any units that are structurally damaged during compaction shall be immediately removed and replaced.
- N. Polymeric joint sand shall be swept into the joints until the joints are full. This will require at least two or three passes with the compactor. Do not compact within 3 ft. (1 m) of the unrestrained edges of the paving units. Follow manufacturer's instructions for the placement and curing of polymeric sand. Do not install sand while pavers are wet or moist.
- O. All work to within 3 ft. (1 m) of the laying face must be left fully compacted with sand-filled joints at the completion of each day.



- P. Excess joint sand shall be swept off at the end of each work day. Do not allow polymeric sand to remain on surface.

### 3.15 FIELD QUALITY CONTROL FOR PAVING

- A. Final elevations shall be checked for conformance to the drawings after removal of excess joint sand.
- B. All surface and pavement structures shall be true to the lines and levels, grades, thickness and cross sections shown on the drawings. All pavements shall be finished to lines and levels to ensure positive drainage at all drainage outlets and channels. In no case shall the cross-fall of any portion of pavement be less than 2 percent. The final surface elevations shall not deviate more than 3/8 in. (10 mm) under a 10 ft. (3 m) long straight edge.
- C. The surface elevation of pavers shall be 1/8 to 1/4 in. (3 to 6 mm) above adjacent drainage inlets, concrete collars or channels.

### 3.16 CLEANING

- A. Totally clean all repaired, rebuilt, or repointed masonry areas of all construction stains and excess mortar. Do not perform any cleaning until mortar joints are fully cured, and the cleaning mock-up has been performed and approved.
- B. Test the specified cleaners on a small area of masonry wall to determine compatibility with the masonry, window units, sealants, etc. Evidence of discoloration, metallic salts, or other detritus shall be grounds for requiring the use of a substitute cleaner.
- C. Apply the cleaner at the manufacturer's recommended dilution rate and dwell duration. Pre-wet the wall if the manufacturer so recommends.
- D. Allow the cleaner to stand for the manufacturer's recommended dwell period while monitoring to ensure that the surface does not dry. Steel bristle wire brushes are not to be used.
- E. Rinse all cleaner from the wall with water applied at the manufacturer's recommended flow and pressure. High pressure washing equipment may be required. Any acid-neutralizing agent required by the manufacturer shall be applied as part of this rinse. Ensure that effluent does not accumulate at ground level, and fully rinse all effluent from sidewalks, streets and landscaping each day.
- F. The Contractor must provide sufficient site protection to prevent the cleaning effluent from draining into the adjacent storm drains. The contractor will provide a narrative as to how the site protection will be performed.

**END OF SECTION**

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## PART 1- GENERAL

### 1.01 IN GENERAL

The General Conditions, and all parts of the Bid and Contract Documents are made part of this Section as if fully repeated herein.

### 1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Divisions 0 and 1 of the Project Manual
- B. Section 02 41 00 - Selective Demolition
- C. Section 02 82 13 - Asbestos Containing Roofing Material Abatement
- D. Section 03 01 00 - Concrete Restoration
- E. Section 07 52 00 - Elastomeric Membrane Roofing
- F. Section 10 75 16 - Flagpole
- G. Section 22 20 00 - Plumbing
- H. Section 50 00 00 - Project-Specific Available Information

### 1.03 SUMMARY OF WORK

This Section specifies requirements for the following Scope of Work:

- A. Prepare and paint existing exterior steel stairs to remain at Roof Areas A and C.
- B. Modify the existing exterior steel stairs at Roof Areas A and C for new base connection to structure. Coordinate with replacement roofing and roof blocking in Sections 06 10 00 – Rough Carpentry and 07 52 00 Elastomeric Membrane Roofing.
- C. Remove and dispose of existing steel dunnage where rooftop equipment is to be removed.
- D. Prepare and paint existing exposed steel members and cast-iron penetrations to remain (support posts, vent pipes, etc.).
- E. Provide stainless steel cover plates at abandoned chimney infill locations as indicated on the Contract Drawings.

### 1.04 JOB CONDITIONS

- A. SPECIAL NOTE: Portions of the existing flashings and roofing membrane have been tested and found to contain Asbestos Containing Materials (ACM). The Contractor shall comply with the National Emission Standard for Hazardous Air Pollutants (NESHAP) regulation published in the Federal Register under 40 CFR, Part 61, subpart M. Specific attention is directed to Appendix A of this regulation entitled, Interpretive Rule Governing Roof Removal Operations. In addition to these regulations, the Contractor shall comply with OSHA Regulation (29 CFR Parts 1910 et al – Occupational Exposure to Asbestos; Final Rule) and all other State and

Local guidelines regarding asbestos containing material removal and disposal. For clarification, refer to Section 02 82 13 Asbestos Containing Material Removal.

- B. Lead Paint and Flashings: Lead containing materials were identified at the Work Site. Reference Inspection Report in Section 50 30 00 Hazardous Building Materials Inspection and Inventory. The Contractor shall be responsible for compliance with OSHA lead in construction (29 CFR 1926.62 "Lead Exposure in Construction: Interim Final Rule") and RCRA (USEPA and CT DPH and DEEP) disposal requirements for completion of the demolition and roof replacement work. Lead containing materials shall be managed and disposed by the Contractor in strict accordance to applicable Local, State, and Federal laws.
- C. Polychlorinated Biphenyls: Testing for polychlorinated biphenyls (PCBs) is not required on this project. The existing glazing and sealants at the clerestory skylight units at Roof Area C are to be removed by the contractor and disposed of as PCB waste.
- D. The building will be occupied during construction. The Contractor shall provide all protection, barriers, and guards necessary to segregate their work area, and the areas below, from building occupants.
- E. The Contractor is cautioned that electrical conduits, plumbing, and mechanical lines are in close proximity to the existing members. The Contractor will be responsible for all disconnects/reconnects associated with exposing the elements to be strengthened.
- F. The Contractor shall utilize skilled and experienced specialty workers to install the work. Experienced trade workers shall be utilized for all aspects of the work.
- G. Coordinate the work in this section with the work by other trades to ensure the orderly progress of the work.
  - 1. Should field welding be required, the Contractor shall use caution in the use of welding equipment. The Contractor shall supply a minimum of two (2) fully charged fire extinguishers and enough fire blankets to protect all combustible surfaces. A fire watch must be provided for a minimum of one (1) hour after completion of welding. All welding shall be performed on the ground prior to installing steel. No welding shall be performed adjacent to or in contact with timber framing.
- H. Welding must be performed with the electric arc process (where applicable) and in accordance with AWS "Code for Arc and Gas Welding in Building Construction."

#### 1.05 HOT WORK PROCEDURES

- A. A HOT WORK Permit is required for any operation that involves open flames or producing heat and/or sparks. This includes, but is not limited to: brazing, cutting, grinding, soldering, and welding.

- B. Fully charged, inspected, and approved fire extinguishers shall be on site at all times. No cutting, grinding, or welding of any kind shall proceed without an approved fully charged fire extinguisher.
- C. Make sure construction in the area is non-combustible including insulation.
- D. Remove combustible contents or cover with FM approved blankets or pads.
- E. Follow procedures outlined under FM Global Resources 'Don't Get Burned by Hot Work' and 'Hot Work Permit Form – F2360'.

#### 1.06 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

- A. AISC 326-02 Detailing for Steel Construction
  - B. AISC 303-05 Code of Standard Practice for Steel Buildings and Bridges
  - C. ASTM A36 Standard Specification for Carbon Structural Steel
  - D. ASTM A240/A240M Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications
  - E. ASTM A307-10 Specification for Carbon Steel Bolts and Studs, 60000 PSI Tensile Strength
  - F. ASTM A563-07a Specification for Carbon and Alloy Steel Nuts
  - G. ASTM F593 Standard Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs
  - H. ASTM F844-07a Specification for Washers, Steel, Plain (Flat), Unhardened for General Use
  - I. AWS A2.4 Standard Symbols for Welding, Brazing, and Nondestructive Examination
- AMERICAN WELDING SOCIETY (AWS)
- J. AWS D1.1 Structural Welding Code – Steel
  - K. AWS D1.3 Structural Welding Code – Sheet Steel

STEEL DECK INSTITUTE (SDI)

- L. DDM03 – Diaphragm Design Manual
- M. MOC2 – SDI Manual of Construction with Steel Deck
- N. SDI Publication No. 27 – Design Manual for Composite Decks, Form Decks, and Roof Decks

1.07 SUBMITTALS

Shop Drawings and Submittals shall be made in accordance with the General Conditions and Section 01 31 00 Project Management and Coordination. In addition, the following shall be submitted:

- A. Drawings: Shop and erection details of all framing elements including members (with their connections) not shown on the contract drawings. Welds shall be indicated by standard welding symbols in accordance with AWS A2.4.
- B. Engineered Shop Drawings: Shop drawings by a professional engineer licensed in the state of the project. Include plans, elevations, sections, full sized details (at a minimum scale of 3" = 1'-0"), and attachments to other work. Show member lengths, joints, terminations, and erection sequence. Details shall illustrate the anchorage system, welds, and interfacing with building construction.
- C. Certificates: Certified copies of mill test reports for structural steel, structural bolts, nuts, washers, and other related structural steel items.

Certified copies of welder qualifications test records showing qualification in accordance with AWS D1.1.

A copy of the AISC certificate indicating that the fabrication plant meets the specified structural steelwork category.

1.08 BUILDING PROTECTION

The existing building systems shall be totally protected during the repair work. The Contractor is responsible for the prompt repair of any damage to the building systems resulting from the work at the project at no additional cost to the Owner.

1.09 DIMENSIONS AND QUANTITIES

- A. All dimensions and quantities shall be determined or verified by the Contractor. The Contract Drawings have been compiled from various sources and may not reflect the actual condition at the moment of construction. The Contractor is cautioned to take all precautions and make all investigations necessary to install the proposed work. The Owner will not consider unfamiliarity with the job conditions as a basis for additional compensation.

#### 1.10 QUALITY ASSURANCE

- A. Erector Qualifications: A qualified installer who participates in the AISC Certification program and is designated an AISC Certified Erector, Category **ACSE** at time of bid.
- B. Fabricator Qualifications: A qualified fabricator who participates in the AISC Certification program and is designated an AISC Certified Plant, Category **STD** at time of bid.
- C. Comply with applicable provisions of AISC 303.
- D. The Contractor shall be responsible for correctness of detailing, fabrication, and for the correct fitting of structural members. Connections, for any part of the structure not shown on the Contract Drawings, shall be considered simple shear connections, and shall be designed and detailed in accordance with pertinent provisions of AISC. Substitution of sections or modification of connection details will not be accepted unless approved by the Engineer. Welding shall be in accordance with AWS D1.1.
- E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in the state the project is located, and who is experienced in providing engineering services or the kind indicated. Engineering services are defined as those performed for installations of glazed curtain wall system that are similar to those indicated for this project in material, design, and extent.
- F. Special Inspections are required for review of bolting, welding, and fabrication. Coordinate with the Architect/Engineer, Owner, and/or CA to schedule inspection so as not to delay the work.

#### 1.11 WARRANTY

- A. Manufacturer's warranty: **five (5)** year fabrication warranty.
- B. Upon completion of the work, and prior to final payment, the Contractor shall submit a Guarantee of his work to be free from defect in materials and workmanship. This Guarantee shall be for a period of **three (3) years**, and shall be signed by a Principal of the Contractor's firm, and sealed if a corporation.

### PART 2 - MATERIALS

#### 2.01 STAINLESS STEEL DECK COVER PLATE

- A. AISI Type 304 or 316 stainless steel plate conforming to ASTM A240/A240M requirements.

- B. Fasteners shall be AISI Type 304 stainless steel in conformance with ASTM F593 requirements.

#### 2.02 STEEL SLEEVE FOR FLAGPOLE FOUNDATION

- A. 16-gauge, hot-dip galvanized, corrugated steel sleeve. Coordinate with flag pole manufacturer for size and specifications for use with 6-inch diameter flag pole.

#### 2.03 HIGH-PERFORMANCE STEEL COATING

- A. Industrial coating shall be a direct-to-metal, durable, rust and corrosion-resistant coating specifically formulated for exterior use in protection of metal substrates.
  - 1. 8000 Series Acrylic High Gloss Enamel by Conco
  - 2. Pro Industrial DTM Acrylic by Shewin-Williams
  - 3. Series 1029 Acrylic polymer coating by Tnemec
- B. Primer(s) shall be as required by the coating manufacturer.

### PART 3 - EXECUTION

#### 3.01 FABRICATION

- A. Codes and Standards: Comply with the latest provisions of the following:
  - 1. AISC 303 Code of Standard Practices for Steel Buildings and Bridges.
  - 2. AWS Structural Welding Code-Steel D1.1.
- B. Shop Fabrication and Assembly: Fabricate and assemble structural assemblies in shop to greatest extent possible. Fabricate items of structural steel in accordance with AISC Specifications and as indicated on final shop drawings.
- C. Properly mark and match-mark materials for field assembly. Fabricate for delivery sequence which will expedite erection and minimize field handling of materials.
- D. Welded Construction: Comply with AWS Code for procedures, appearance and quality of welds, and methods used in correcting welding work.
- E. Bolt Holes: Provide pre-drilled holes as indicated on Contract Drawings and as shown on final shop drawings.
- F. Cut, drill or punch holes perpendicular to metal surfaces. Do not flame-cut holes or enlarge holes by burning.

#### 3.02 ERECTION

- A. Erection of structural steel shall be in accordance with the applicable provisions of AISC.



- B. Preparation of Existing Structural Members: Prepare and verify that the existing framing member to receive supplemental strengthening has been prepared to receive the supplemental strengthening members. Clean and remove existing paint and coatings from all mating surfaces. Clean steel in accordance with the latest edition of Steel Structures Painting Council (SSPC) as follows:
  - 1. SP-11: Surface Preparation Specification No. 11 "Power Tool Cleaning to Bare Metal" - for primed or unpainted steel.
- C. Temporary Shoring and Bracing: Provide temporary shoring and bracing members with connections of sufficient strength to bear imposed loads. Remove temporary members and connections when permanent members are in place and final connections are made.
- D. Field Assembly: Set steel strengthening members accurately to lines and elevations indicated. Align and adjust various members before permanently fastening. Clean bearing surfaces and other surfaces which will be in permanent contact before assembly. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.
- E. All personnel shall be currently certified for the welding which they perform.
- F. Splice members only where indicated and accepted on shop drawings.
- G. Do not enlarge un-aligned holes in members by burning or by use of drift pins. Ream holes that must be enlarged to admit bolts.
- H. Touch-Up Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint. Apply paint to exposed areas using same material as used for shop painting.
- I. Apply by brush or spray to provide minimum dry film thickness of 1.5 mils.

### 3.03 BOLT INSTALLATION

- A. Install bolts where indicated on Contract Drawings. Torque all existing thru-bolts to AISC specifications using accurately calibrated torque wrenches. Replace all rusted or deteriorated bolts.
- B. After all bolts shall be torqued to AISC specifications using accurately calibrated torque wrenches. Provide minimum four (4) exposed threads; apply specified epoxy over exposed threads to prevent nuts from "backing-off" bolt.

### 3.04 STEEL COATING

- A. Protect the existing roof, equipment, mechanical and electrical services, and the building exterior during preparation and application of the protective coating.

- B. Surface preparation: Hand-tool Clean per SSPC-SP2, Remove all oil and grease per SSPC-SP1. Apply primer(s) in accordance with manufacturer's recommendations.
- C. Apply two (2) coats of coating to prepared steel at the manufacturer's required film thickness. Following the installation, review for deficiencies and perform repairs.
- D. Verify and report the applied coating thickness.
- E. Clean spills and spatters immediately with soap and warm water.

### 3.05 QUALITY CONTROL

- A. Any material or workmanship which is rejected by the Engineer either in the mill, shop or field shall be replaced promptly to the satisfaction of the Engineer.
- B. Corrective Work:
  - 1. Structural steel members or assemblages having fabrication errors exceed permissible tolerances, or which inspections or laboratory test reports have indicated to be not in compliance with specifications, shall not be allowed in the finished work. Such members or assemblages may be corrected if permitted by the Engineer or the testing agency.
  - 2. Perform additional test, at Contractor's expense, as may be necessary to reconfirm any non-compliance of original work, and as may be necessary to show compliance of corrected work.
  - 3. Corrective work is to be done preferably in the shop, and in accordance with AISC and AWS requirements. When requested by the Engineer, submit shop drawings, "for approval", showing details of proposed corrective work.
- C. Welding: The Owner will engage an independent testing agency to inspect and test during fabrication and erection of structural steel assemblies, as follows:
  - 1. Certify welders and conduct inspections and tests as required. Record types and locations of defects found in work. Record work required and performed to correct deficiencies.
  - 2. Perform visual inspection of welds.

**END OF SECTION**

## PART 1- GENERAL

### 1.01 IN GENERAL

The General Conditions, and all parts of the Bid and Contract Documents are made part of this Section as if fully repeated herein.

### 1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Divisions 0 and 1 of the Project Manual
- B. Section 02 41 00 - Selective Demolition
- C. Section 02 82 13 - Asbestos Containing Roofing Material Abatement
- D. Section 04 50 00 - Masonry
- E. Section 07 52 00 - Elastomeric Membrane Roofing
- F. Section 07 62 00 - Sheet Metal and Flashing
- G. Section 50 00 00 - Project-Specific Available Information

### 1.03 SUMMARY OF WORK

This Section specifies requirements for the following Scope of Work:

- A. Re-secure existing wood blocking at roof edges, roof penetrations, parapets, expansion joints, and roof-to-wall locations where wood can remain.
- B. Replace deteriorated blocking (Allowance and Unit Price Item).
- C. Provide new wood blocking at roof edges, roof penetrations, parapets, expansion joints, and roof-to-wall locations.
- D. Provide new wood blocking to raise existing roof curbs to accommodate increased insulation.
- E. Replace deteriorated wood decking at Building 460, Roof Areas C and D (Allowance and Unit Price Item).
- F. Perform fastener pullout resistance testing and report to Engineer.
- G. Refasten the existing wood roof deck 100% in accordance with FM Global recommendations.
- H. Provide plywood sheathing at existing rising wall locations, parapets, and other locations as indicated on the Contract Drawings.
- I. Provide wood deck infill at Building 460 at existing chimneys to be removed and where existing mechanical equipment is to be removed.
- J. Conform to FM Global Loss Prevention Data Sheet 1-49 for all blocking attachment requirements.

- K. Provide dimensional lumber of minimum 6"-wide construction-grade pressure-treated Southern Yellow Pine, formed to the dimensions shown on the Detail Drawings and as required for proper installation of the new work.
- L. Provide stainless-steel fasteners for connections of wood blocking to structurally sound substrates.

#### 1.04 JOB CONDITIONS

- A. **SPECIAL NOTE:** Portions of the existing flashings and roofing membrane have been tested and found to contain Asbestos Containing Materials (ACM). The Contractor shall comply with the National Emission Standard for Hazardous Air Pollutants (NESHAP) regulation published in the Federal Register under 40 CFR, Part 61, subpart M. Specific attention is directed to Appendix A of this regulation entitled, Interpretive Rule Governing Roof Removal Operations. In addition to these regulations, the Contractor shall comply with OSHA Regulation (29 CFR Parts 1910 et al – Occupational Exposure to Asbestos; Final Rule) and all other State and Local guidelines regarding asbestos containing material removal and disposal. For clarification, refer to Section 02 82 13 Asbestos Containing Material Removal.
- B. **Lead Paint and Flashings:** Lead containing materials were identified at the Work Site. Reference Inspection Report in Section 50 30 00 Hazardous Building Materials Inspection and Inventory. The Contractor shall be responsible for compliance with OSHA lead in construction (29 CFR 1926.62 "Lead Exposure in Construction: Interim Final Rule") and RCRA (USEPA and CT DPH and DEEP) disposal requirements for completion of the demolition and roof replacement work. Lead containing materials shall be managed and disposed by the Contractor in strict accordance to applicable Local, State, and Federal laws.
- C. **Polychlorinated Biphenyls:** Testing for polychlorinated biphenyls (PCBs) is not required on this project. The existing glazing and sealants at the clerestory skylight units at Roof Area C are to be removed by the contractor and disposed of as PCB waste.
- D. Wood blocking is to be installed in compliance with Factory Mutual uplift ratings corresponding to the design uplift pressures listed below. Specific manufacturer's requirements to be followed. Provide blocking securement per Data Sheet 1-49.
  - 1. Roof Areas A, B:
    - a. Field Zone, 35 psf
    - b. 5-ft. Perimeter Zone, 55 psf
    - c. 5-ft. x 5-ft. Corner Zone, 85 psf
  - 2. Roof Areas C, D, E
    - a. Field Zone, 50 psf
    - b. 6-ft. Perimeter Zone, 75 psf
    - c. 6-ft. x 6-ft. Corner Zone, 110 psf
- E. Immediately upon delivery to the job site, place materials in an area protected

from weather. Coordinate with Owner for storage space assignment before delivery is expected.

- F. Store materials a minimum of 5" above grade, or floor on framework, or blocking and cover with protective waterproof covering providing for adequate air circulation or ventilation.
  - 1. Polyethylene or other impervious films may not be used. Woven tarpaulins or other "non-sweating" coverings are required.
  - 2. Do not store seasoned materials in wet or damp locations.

If delays in the project exceeding one (1) week are anticipated due to inclement weather (or due to any other project condition), all wood shall be stored in weatherproof box trailers or storage sheds, provided by the Contractor, in locations to be designated by the Owner.

- G. All surfaces to receive the new wood blocking shall be thoroughly dry. Should surface moisture such as dew exist, the General Contractor shall provide the necessary equipment to dry the surface prior to application. Do not dry with open flames.
- H. Do not leave any newly installed wood blocking exposed. Cover and protect all newly installed wood daily with the new flashing system or temporary covers until the roof/flashing systems are installed.
- I. Perform fastener pull-out tests in accordance with ANSI/SPRI FX-1 Standard Field Test Procedure for Determining the Withdrawal Resistance of Roofing Fasteners. Perform testing with fasteners approved for use.
- J. Limit the amount of combustibles in the construction area and provide good housekeeping standards. Dispose of combustible rubbish safely and promptly.
- K. Smoking is not allowed on the roofs at any time. Smoking will be allowed in a safe, designated area. Post smoking policy signs throughout the area.
- L. One the job is loaded with materials, store materials on dunnage. Cover insulation materials at the end of each day to avoid moisture damage.
- M. Provide a minimum of two (2) 10-pound ABC fire extinguishers on site during the roof construction.

#### 1.05 SUBMITTALS

- A. Submittals shall be made in accordance with the Division 1.
- B. The Contractor shall submit the following items with their submittal package.
  - 1. Temporary shoring plans.
  - 2. Specified product data including wood blocking, plywood sheathing, wood restoration products and sheathing, bolts, anchors, screws, and fasteners.
  - 3. FX-1 fastener pullout testing results.

- C. Submit all proposed wood species, grades, grading agency, certificates, and source information to the engineer for written approval prior to ordering any materials.
- D. All dimensional lumber shall be field tested for moisture content prior to installation. Contractor shall submit test results of each board to Engineer for approval prior to installation.

1.06 QUALITY CONTROL

- A. All dimensional lumber shall be stored, maintained, and installed at a moisture content less than 19%. All lumber shall be field tested for moisture content by the Contractor. Contractor shall submit test results of each board to Engineer for approval prior to roofing or flashing installation.
- B. Protect lumber from exposure to moisture once installed. Any lumber with a moisture content 19% of greater must be removed and cannot be installed until acceptable moisture content is achieved.

1.07 DIMENSIONS AND QUANTITIES

- A. All dimensions and quantities shall be determined or verified by the Contractor. The Contract Drawings have been compiled from various sources and may not reflect the actual condition at the time of construction. The Contractor is advised to take all precautions and make all investigations necessary to install the proposed work. The Owner will not consider unfamiliarity with the job conditions as a basis for additional compensation.

1.08 UNIT PRICE WORK

- A. The Unit Prices are above and beyond those shown on the Contract Drawings and shall be carried by the Contractor within the Base Bid Scope of Work. Unit prices for certain work of this Section are listed in Section 01 20 00 – Contract Considerations, 1.4 Unit Prices that precedes the technical specifications. The Contractor and Engineer shall verify the actual quantities used.
- B. For deteriorated wood blocking replacement, the Base Bid shall include all labor, access, materials, and accessories required for the proper installation. The current quantity of deteriorated wood blocking replacement is unknown. The base bid shall include **250** board feet of wood blocking replacement.
- C. For deteriorated wood plank decking replacement, the Base Bid shall include all labor, access, materials, and accessories required for the proper installation. The current quantity of deteriorated wood plank decking is unknown. The base bid shall include **500** square feet of wood plank decking replacement.
- D. For miscellaneous plywood sheathing, Base Bid shall include all labor, access, materials, and accessories required for the proper installation. The base bid shall include **320** square feet of plywood sheathing.

## 1.09 WARRANTY

- A. Upon completion of the work, and prior to final payment, the Contractor shall submit a Guarantee of his work to be free from defect in materials and workmanship. This Guarantee shall be for a period of **three (3) years** and shall be signed by a Principal of the Contractor's firm, and sealed if a corporation.

## PART 2 - MATERIALS

### 2.01 DIMENSIONAL LUMBER

- A. All dimensional lumber for roofs shall be construction grade pressure treated Southern Yellow Pine, formed as required for proper installation of the new work. All new exterior perimeter woodwork, nailers and wood blocking used on the building shall be minimum 6" wide, except where otherwise detailed.
- B. All roof woodwork shall have a maximum moisture content of 19% by weight on a dry weight basis. Kiln drying may be required to conform to maximum 19% moisture content.

### 2.02 ROOF PLANKING

- A. Replacement wood roof deck planking shall be 5-1/2"x2" thick spline joint boards to match the existing. Decking shall be No. 1 grade or better Douglas Fir or Southern Pine of sufficient length to provide spans across two rafter bays (three supports) minimum.

### 2.03 PLYWOOD

- A. Plywood shall be APA Rated Sheathing, Grade CD, Exterior, minimum 1/2" thick unless designated otherwise on the detail drawings. Pressure treated plywood is required where in contact with concrete or masonry substrates.

### 2.04 FASTENERS AND ANCHORS:

- A. In general, all fasteners, anchors, nails, straps, and other accessories shall be of stainless-steel Series 300 or galvanized steel. Galvanizing shall be hot dip in accordance with ASTM A153 Specifications G-185. Electro-galvanized items shall not be used.
- B. Stainless steel fasteners shall be Type 302/304/316.
- C. Fasteners for securing plywood and wood blocking to wood blocking shall be stainless steel annular threaded ring shank nails. Fasteners shall be of sufficient length to penetrate the receiving member 1-1/2" minimum, except full depth into plywood.

- D. All nails shall be hot-dipped galvanized or stainless steel, annular ring nails. Nails shall be sized as required for system attachment including 10d (minimum 0.148 diameter by 3" long) and 16d (minimum 0.162" diameter by 3-1/2" long).
- E. Fasteners for securing new and existing decking to existing rafters shall be 1/4" diameter stainless steel wood screws of sufficient length to penetrate rafter minimum 2".
- F. Fasteners for securing wood blocking to masonry and concrete or masonry substrates shall be one piece, fluorocarbon coated, and minimum 1/4" diameter self-tapping threaded fasteners as manufactured by the Star Fasteners, Tapcon, Olympic Manufacturing Group, Powers Fasteners Company.
- G. Fasteners for securing wood blocking to structural steel shall be FM Global approved Heavy Gauge Self-Drilling Self-Tapping Screws with Drill Point #5.
- H. Adhesive Anchors: Install anchors in accordance with manufacturer's recommendations. Anchors shall be 5/8" diameter threaded stainless steel epoxy anchors of sufficient length to embed distance indicated on Contract Drawings. Provide AISI 304 stainless steel screen tubes for hollow or voided masonry. Adhesive for use with anchors shall be multi-component, 100% solids, solvent-free, moisture-tolerant, high-modulus, high-strength, structural epoxy conforming to ASTM C881 Type 1 and IV, Grade 3, Class-B/C.

## 2.05 BATT INSULATION

- A. Unfaced Mineral Wool BATT Insulation: ASTM C 665, ASTM E 136, Type I, Non-combustible, Flame Spread = 0, Smoke Developed = 0

## 2.06 FIBER CEMENT CLADDING PANELS

- A. General: Provide accessories essential to wall panel systems completion as specified herein, as furnished by the panel manufacturer. Fabricate accessory items in accordance with the system manufacturer's directions as amended by these Specifications and the shop drawing review comments. Manufacturer's standard termination and flashing details apply to this Project even though they may not be specifically shown on the drawings. Provide complete fiber cement wall panel system.
- B. Panels shall meet or exceed the requirements of ASTM C 1186, Type A, Grade II.
- C. Panels shall be manufacturer's standard commercial panel, 4 feet by 8 feet, nominally, 5/16-inch-thick, smooth texture.
- D. Provide factory baked on finish (ColorPlus Finish or equal). Color to be selected from manufacturer's full color range.



- E. Acceptable manufacturers: James Hardie Building Products, Inc, Allura of Plycem, or approved equal.

## 2.07 WEATHER RESISTANT BARRIER

- A. Provide a vapor-permeable, weather-resistant barrier system. Components and accessories are to be obtained from a single-source manufacturer to obtain system integrity and compatibility. Minimum performance criteria:
  - 1. Thickness, 11 mil sheet.
  - 2. Breathability in accordance with ASTM E96.
  - 3. Tear strength in accordance with ASTM D1117.
  - 4. Water resistance in accordance with AATCC127.
  - 5. Air Penetration in accordance with TAPPI - T460
- B. Building felt shall be asphalt-saturated rag felt, Type II, No. 30 asphalt felt in accordance with ASTM D 226.
- C. Modified bitumen underlayment shall be a butyl rubber based, self-adhering underlayment. Modified bitumen shall be high temperature product for use under sheet metal and shingle components.

## PART 3 - EXECUTION

### 3.01 GENERAL

- A. Prepared surfaces must be clean and dry. Fill, chip, or grind as required to provide a smooth, uniform surface.
- B. **Coal tar pitch is present in the existing roof system.** Destructive test cuts revealed a nailed base sheet on the wood deck, but the Contractor should expect to encounter coal tar pitch on the deck surface at breaches, laps, penetrations, etc. The Contractor is to remove the coal tar pitch to the greatest extent possible without damaging the existing wood deck.
- C. Examine supporting substrates and abutting structural framing for compliance with requirements for installation tolerances and other conditions affecting performance.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.
- E. Refer to FM Data Sheet 1-49 concerning fastener spacing requirements for perimeter blocking anchorage. All anchors and fasteners that attach wood blocking to the structure shall have their spacing halved for a 6' length away from all exterior corners of the perimeter. **Maximum fastener spacing shall be 2' on center and 1' on center within the corner zone for each roof area.**

- F. All butt joints in woodwork shall be flush to provide a smooth, uniform line with no irregularities. Built-up blocking shall have butt joints staggered 4' minimum layer to layer. The minimum length of any individual piece of woodwork shall be 2'. All lengths of woodwork shall have a minimum of four (4) fasteners. Layers of wood blocking at corners shall be interlocked to provide additional stability.
- G. During removal and replacement of woodwork, the Contractor shall report to the Engineer any existing wood blocking designated to remain, or structural supports which are deteriorated or unsuitable. Do not cover unacceptable areas until reviewed by the Engineer but provide temporary protection to the area in question.
- H. The perimeter wood blocking shall be installed at a consistent, even height throughout that roof area(s) to provide an even and continuous line for metal fascia installation. Provide a flush transition from insulation to blocking where indicated.
- I. Install structural wood framing and securely anchor to supporting structure.
- J. Install wood framing and accessories plumb, square, and true to line and with connections securely fastened.
- K. Locate fasteners and install according to Construction Drawings, and complying with requirements for spacing, edge distances, and screw or nail penetration.
  - 1. Fasten framing members by screw fastening or nailing.
- L. Install framing members in one-piece lengths unless splice connections are indicated.
- M. Install temporary bracing and supports to secure framing and support loads comparable in intensity to those for which structure was designed. Maintain braces and supports in place, undistributed, until entire integrated supporting structure has been completed and permanent connections to framing are secured.
- N. Do not bridge building expansion and control joints with wood framing.
- O. Install mineral wool BATT insulation in built-up exterior framing members, such as headers, sills, boxed joists, and multiple studs at openings, that are inaccessible on completion of framing work.
- P. Construction Tolerances: Install wood framing level, plumb, and true-to-line to a maximum allowable tolerance variation of 1/8 inch in 10 feet and as follows:
  - 1. Space individual framing members no more than plus or minus 1/8 inch from plan locations. Cumulative error shall not exceed minimum fastening requirements of sheathing or other finishing materials.

### 3.02 REMOVAL OF WOOD BLOCKING

- A. Remove and dispose of all deteriorated wood blocking and all blocking scheduled to be removed and replaced in accordance with the Contract Drawings and this Specification.
- B. During removal and replacement of woodwork, the Contractor shall report to the A/E, Owner, and/or CA any existing wood blocking designated to remain, which is deteriorated or unsuitable. Do not cover unacceptable areas until reviewed by the Engineer, and provide temporary protection to the area in question.

### 3.03 ROOF PERIMETER BLOCKING

- A. At roof perimeters, the wood blocking and plywood shall be installed as detailed. Provide 6" nominal wide blocking at roof perimeters unless otherwise detailed. Provide full width blocking at tops of parapets.
- B. Existing wood blocking and curbs may be required to be cut back or trimmed to provide an even flush assembly as shown on the Detail Drawings. This shall be accomplished with power or hand tools. Should cutting of existing components reduce or eliminate securement of their components, the Contractor shall re-secure with the appropriate fasteners.

### 3.04 PREPARATION AND REFASTENING OF EXISTING DECK PLANKS

- A. Remove all existing roofing materials as shown on the detail drawings.
- B. Remove or drive flush all nails, staples and other items as required to properly prepare the deck surface.
- C. The Contractor shall take care not to damage any components designated to remain.
- D. Refasten 100% of the existing roof planks to the existing roof rafters.
- E. Remove and replace deteriorated sections of wood sheathing and/or decking. Replacement sections shall provide two spans of structural supports minimum.
- F. Deteriorated work shall be defined as any wood member which exhibits extensive splitting, checking, soft damp areas, cracks, insect infestation or excessive deflection.
- G. Secure wood decking in accordance with FM Data Sheets 1-28 and 1-29 at all roof areas.
- H. Field Zone: One (1) 1/4-inch diameter, 4-inch minimum length screw per plank to achieve 1-inch embedment.

- I. Perimeter and Corner Zones: Two (2) 1/4-inch diameter, 4-inch minimum length screws per plank to achieve 1-inch embedment.
- J. Fastening requirements are based on fastener pullout values of 360 lbs. per fastener in the field of the roof and 275 lbs. per fastener in the perimeter and corner zones.
- K. Provide deck closure at masonry perimeter walls. Refer to Section 07 62 00 Sheet Metal and Flashing for closure plate.
- L. Engineer to review timber joist attachment to masonry walls during demolition.

### 3.05 FASTENING OF WOODWORK

- A. All existing woodwork to be reused shall be re-secured with the specified fasteners spaced 24" on center maximum when applicable.
- B. Wood blocking to wood blocking connections shall be made using the specified nails spaced 12" on center maximum and staggered off the centerline of the woodwork being secured. Nails shall be of sufficient length to penetrate the receiving member 1-1/4" minimum.
- C. Wood blocking shall be fastened directly to the roof deck with the specified fasteners spaced in a double row at 16" on center maximum. Predrilling of fastener holes at concrete deck areas will be required prior to installing fasteners. **Existing blocking scheduled to remain shall be re-secured with the appropriate fasteners spaced 24" on center and one foot on center within the corner zone for each roof area.**
- D. Plywood shall be fastened to vertical concrete or masonry, surfaces with the specified fasteners spaced 8" on center vertically and horizontally.
- E. Perimeter of plywood over framing supports shall be fastened with the specified fasteners spaced 8" on center to the top and bottom framing tracks.
- F. The field of the plywood over framing supports shall be fastened with the specified fasteners spaced 8" on center vertically and at 16" on center horizontally to match the light gauge metal framing.

### 3.06 UNIT CURBS

- A. Where applicable, wood blocking shall be installed to provide curbs to support units as required to raise units 8" minimum above the roof surface, and to provide a smooth flashing transition between the insulation systems and curb unit as shown on the Detail Drawings.
- B. Mechanical and electrical work requiring extension in order to raise and support units shall be completed by licensed tradesmen.

3.07 CLEAN UP

- A. Site clean-up shall be complete and performed daily to the satisfaction of the Owner. Roof, building (interior and exterior), hardscape and adjacent areas shall be cleaned of all trash, debris and dirt caused by, or associated with, the work.
- B. All trash and debris shall be completely removed from the site daily during the work and at the completion of the work. All debris shall be legally disposed of off-site.

**END OF SECTION**

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## PART 1 - GENERAL

### 1.01 IN GENERAL

The General Conditions and all parts of the Bid and Contract Documents are made part of this Section as if fully repeated herein.

### 1.02 RELATED WORK SPECIFIED ELSEWHERE:

- A. Divisions 0 and 1 of the Project Manual
- B. Section 02 41 00 - Selective Demolition
- C. Section 02 82 13 - Asbestos Containing Roofing Material Abatement
- D. Section 02 83 00 – Lead Paint Activity
- E. Section 02 84 33 – Removal and Disposal of PCBs
- F. Section 03 01 00 - Concrete Restoration
- G. Section 04 50 00 - Masonry
- H. Section 05 50 00 - Miscellaneous Metals
- I. Section 06 10 00 - Rough Carpentry
- J. Section 07 62 00 - Sheet Metal and Flashing
- K. Section 22 20 00 – Plumbing
- L. Section 23 05 00 – Mechanical
- M. Section 26 05 02 – Electrical
- N. Section 50 00 00 - Project-Specific Available Information

### 1.03 SUMMARY OF WORK:

This Section specifies requirements for the following Scope of Work:

- A. Supply all necessary chutes, disposal facilities, transportation, and labor necessary to dispose of all demolished materials, dirt, and debris off-site in a legal dumping area. The Contractor shall obtain all permits necessary to transport and dispose of all materials, rubbish, and debris.
- B. Clear roof surfaces of gravel and ballast shoveling, sweeping, and vacuuming methods as required to remove all gravel and debris from the roof surface.
- C. Proposed roofing systems shall have a UL Class A fire rating.
- D. Proposed roofing systems shall have a FM Global Class SH hail rating.
- E. Submit a phasing plan and schedule for removal and installation.
- F. Perform fastener pullout resistance testing in accordance with Section 06 10 00 and report results to Engineer.
- G. At Roof Areas C and D: Provide a 90-mil EPDM adhered membrane and flashing system including a thermal barrier base board, adhered vapor barrier, mechanically attached insulation, and adhered coverboard. Adhere tapered

insulation crickets to the mechanically attached insulation beneath the coverboard.

- H. At Roof Areas A and B: Provide a 90-mil EPDM adhered membrane and flashing system with a fully adhered roof assembly consisting of vapor barrier, insulation, and coverboard.
- I. At Roof Area E: Provide new insulation crickets and coverboard (mechanically attached) and 90-mil EPDM adhered membrane. Coordinate with Section 07 62 00 – Sheet Metal and Flashing to replace the existing gutter with one (1) edge scupper.
- J. Provide protection membrane and pavers at grease exhaust fans. Refer to Section 04 50 00 for pavers.
- K. Provide and test edge metal in accordance with ANSI/SPRI ES-1 and Section 07 62 00 – Sheet Metal and Flashing.
- L. Remove and replace expansion joint at Roof Area A.
- M. Restore existing clerestory skylights at Roof Area C with new membrane flashings, membrane roofing, and sheet metal flashings. Provide new glazing, sealants, and mullion flashings. Coordinate with Section 07 62 00 – Sheet Metal and Flashing.
- N. Remove and replace dome skylights at Roof Area A with new, OSHA-rated skylight units.
- O. Remove and reinstall curbs to accommodate increased insulation. Coordinate with Section 06 10 00 for new wood blocking.
- P. Notify CT Department of Administrative Services, Office of the State Fire Marshall (OSFM) upon reinstallation of two (2) smoke hatches at Roof Area C and provide access for functional tests, to be conducted by OSFM.
- Q. Strip in all field EPDM seams and flanges of sheet metal flashings with minimum 6” wide un-cured flashing membrane.
- R. Terminate roof membrane and flashings with blind nailers, beneath counter flashings and as required by the selected membrane manufacturer.
- S. Provide tapered insulation drain sumps. Total insulation thickness at drains to be 1” (max.) less than the field of roof.
- T. Install one-half inch per foot tapered insulation crickets between drains, at scupper locations, and as required for a complete properly draining roof system.
- U. Remove and replace existing asphalt shingles at roof transitions and patch locations.



- V. Clean and restore all areas affected by the work.
- W. FM Global Form 2688, Application for Acceptance of Roofing System shall be used to determine FM approval of the roof system. Contractor to complete and submit form to FM Global for review and acceptance prior to procurement of roof materials. Copy Engineer on submission to FMG.

1.04 JOB CONDITIONS:

- A. SPECIAL NOTE: Portions of the existing flashings and roofing membrane have been tested and found to contain Asbestos Containing Materials (ACM). The Contractor shall comply with the National Emission Standard for Hazardous Air Pollutants (NESHAP) regulation published in the Federal Register under 40 CFR, Part 61, subpart M. Specific attention is directed to Appendix A of this regulation entitled, Interpretive Rule Governing Roof Removal Operations. In addition to these regulations, the Contractor shall comply with OSHA Regulation (29 CFR Parts 1910 et al – Occupational Exposure to Asbestos; Final Rule) and all other State and Local guidelines regarding asbestos containing material removal and disposal. For clarification, refer to Section 02 82 13 Asbestos Containing Material Removal.
- B. Lead Paint and Flashings: Lead containing materials were identified at the Work Site. Reference Inspection Report in Section 50 30 00 Hazardous Building Materials Inspection and Inventory. The Contractor shall be responsible for compliance with OSHA lead in construction (29 CFR 1926.62 "Lead Exposure in Construction: Interim Final Rule") and RCRA (USEPA and CT DPH and DEEP) disposal requirements for completion of the demolition and roof replacement work. Lead containing materials shall be managed and disposed by the Contractor in strict accordance to applicable Local, State, and Federal laws.
- C. Polychlorinated Biphenyls: Testing for polychlorinated biphenyls (PCBs) is not required on this project. The existing glazing and sealants at the clerestory skylight units at Roof Area C are to be removed by the contractor and disposed of as PCB waste.
- D. Roof system is to be installed in compliance with Factory Mutual uplift ratings corresponding to the design uplift pressures listed below. Specific manufacturer's requirements to be followed. Provide perimeter and corner enhanced securement per Data Sheet 1-29.
  - 1. Roof Areas A, B:
    - a. Field Zone, 35 psf, FM 1-90
    - b. 5-ft. Perimeter Zone, 55 psf, FM 1-135
    - c. 5-ft. x 5-ft. Corner Zone, 85 psf, FM 1-195
  - 2. Roof Areas C, D, E
    - a. Field Zone, 50 psf, FM 1-120
    - b. 6-ft. Perimeter Zone, 75 psf, FM 1-180
    - c. 6-ft. x 6-ft. Corner Zone, 110 psf, FM 1-255

- E. FM Global Form 2688, Application for Acceptance of Roofing System shall be used to determine FM approval of the entire roof system. Contractor to complete and submit form to FM Global for approval or acceptance prior to material procurement.
- F. Perform fastener pull-out tests in accordance with Section 06 10 00 Rough Carpentry and ANSI/SPRI FX-1 Standard Field Test Procedure for Determining the Withdrawal Resistance of Roofing Fasteners.
- G. Coordinate asphalt shingle roofing removals with the existing roof warranty and manufacturer's requirements for modifications to a warranted roof. Information on the existing roof can be found in Section 50 10 00.
- H. All surfaces to receive new insulation, membrane or flashings shall be thoroughly dry. Should surface moisture such as dew exist, the Contractor shall provide the necessary equipment to dry the surface prior to application. No open flames shall be permitted on the roof at any time.
- I. Equipment required to hoist materials to the roof and remove debris from the roof shall be supplied, maintained, and operated by the Contractor.
- J. Remove rubbish and debris from the project site daily; do not allow accumulations inside or outside the buildings.
- K. Remove the plastic packaging for the insulation and cover boards immediately upon receipt of delivery. Failure to remove the plastic packaging may result in entrapment of condensation or moisture. If the boards are stored outside they must be stored level, off the ground, and protected by a breathable waterproof cover. A means for air circulation around and under stored bundles should be provided. The cover boards should not be installed during rain, heavy fog, and any other conditions that may deposit moisture on the surface. The presence of free moisture can have a detrimental effect on the performance of the insulation and the installation of the roof membrane allowing adhesive not to dry properly ultimately leading to a roof failure. Do not install any cover boards exposed to moisture during this project.
- L. Ensure roof insulation boards are set on pallets or dunnage and are protected from the weather and sunlight prior to installation. Do not allow plastic to cover the insulation as it can allow condensation. A breathable material such as canvas is recommended. Do not install any insulation exposed to moisture during this project.
- M. The Contractor shall remove only as much roofing, flashing and associated components and other exterior waterproofing components as can be made weathertight in a given day's work, including all flashings and associated components as required to maintain the roof in a watertight, secure condition throughout the duration of the project. Should unforeseen conditions be encountered, the Contractor will be responsible for temporary protection and

weather tightness until a solution is determined by the Engineer and implemented by the Contractor.

- N. Should unforeseen conditions be encountered, the Contractor will be responsible for temporary protection and weather tightness until a solution is determined by the Engineer and implemented by the Contractor.
- O. The existing roofing system contains coal tar pitch. During the roof removal process, workers must have the proper personal protective equipment including but not limited to: gloves, face shields, and clothes that cover the skin.
- P. Roofing shall not be applied when ambient temperature is less than 40 degrees F unless approved in writing by the Engineer and membrane manufacturer. Cold weather adhesives, delivery, and storage systems will be required.
- Q. All new and temporary construction, including equipment and accessories, shall be secured from wind damage or blow off.
- R. Temporary waterstops shall be installed at the end of each day's work and shall be removed before proceeding with the next day's work. Water stops shall be compatible with all materials and shall not emit dangerous or incompatible fumes.
- S. Cover sidewall areas with canvas tarps where existing roof system is discarded into refuse containers via trash chutes. Plastic or "poly" tarps shall not be used. Do not cover or block air intake or discharge louvers.
- T. The Contractor shall provide protection of entrance ways, sitework, plantings, landscaping, building surfaces and similar items to protect from damage. Items damaged as a result of the work in this section shall be repaired or replaced by the Contractor to the satisfaction of and at no additional cost to the Owner.
- U. The Contractor is cautioned that oil and penta based materials and preservatives are not compatible with compounded rubber membranes.
- V. Materials, equipment, and demolition debris shall not be stored on roof decks in such a manner as to overstress and/or damage the deck and supporting structure. Placing of loads at midspans of framing shall be avoided. Superimposed loads shall be well distributed and shall not exceed 20 psf at any given point of the roof at any time during the construction. Equipment, apparatus, construction materials, and demolition debris shall not, in any case, be allowed to load the roof structures in combination with any standing snow or ice upon the roofs.
- W. Fully charged, inspected, and approved fire extinguishers shall be on site at all times. No cutting, grinding, or welding of any kind shall proceed without an approved fully charged fire extinguisher.
- X. Install protective coverings at paving and building walls adjacent to disposal areas prior to starting the work. Lap protective coverings not less than six inches, secure

against wind, and vent to prevent collection of moisture on covered surfaces. Keep protective coverings in place for the duration of the roofing work.

#### 1.05 SUBMITTALS

A sample roofing system warrantee and letter of confirmation from the roof membrane manufacturer stating that the Contract Documents have been reviewed and that there are no exceptions to the Specifications and Contract Drawings shall be submitted.

- A. Prior to or along with the product data submittals, submit an assembly letter from the roofing membrane manufacturer listing the materials proposed for use. Provide approval from the insulation manufacturer and membrane manufacturer that the proposed insulation system will achieve the specified warranty.
- B. FM Global Form 2688 and Roof Nav No. for selected roof system. Include the Roof Nav. No. on the manufacturer's assembly letter.
- C. FX-1 fastener pullout testing results.
- D. Provide the manufacturer's product and installation literature for approval. Include job specific shop drawings for specific manufacturers and project related details.
- E. Provide documentation indicating that the Contractor is a Certified Installer of the materials to be used.
- F. Tapered insulation plan and cross section shop drawings.
- G. Submittals shall be made in accordance with the General Conditions of the Contract for Construction and this section.
- H. Tapered insulation shop drawings showing total Average R-value for proposed system and thicknesses of multi-layer flat stock, tapered and cricket insulations.
- I. Samples of skylight glazing units with laminated film(s) and sealants for Owner selection.
- J. Secure all roof-mounted equipment to resist a minimum wind speed of 95 mph.
- K. Provide a letter of approval from the insulation manufacturer and membrane manufacturer that the proposed insulation system will achieve the specified warranty.
- L. A sample roofing system warrantee and letter of confirmation from the roof membrane manufacturer stating that the Contract Documents have been reviewed and that there are no exceptions.

1.06 WARRANTY

- A. Roofing Systems Manufacturer's Warranty: The roofing manufacturer shall guarantee roof areas to be in a watertight condition and free from blistering, seam separation, and the delamination of the roofing system components, for a period of **30 years**, from the date of *Substantial Completion* of the roofing system. The warranty shall be a **30-year** no dollar limit, non-prorated total system labor and material warranty, for wind speeds up to **90 miles per hour**. The total system warranty shall include all roofing materials, related components, and accessories including, but not limited to the thermal barrier base board, vapor retarder, insulation board, cover board, roofing membrane, membrane flashings, fasteners, adhesives, and termination metals, and roof drain assemblies. The manufacturer shall repair leaks and defects, in materials, and workmanship as promptly after observation as weather and site conditions permit.
- B. Glazing Warranty: The glazing manufacturer shall guarantee against hermetic seal and interpane dusting or misting for a period of **10 years**, from the date of *Substantial Completion* of the glazing install. The warranty shall be a **10-year** no dollar limit, non-prorated material warranty for replacement of defective glazing units.
- C. Upon completion of the work, and prior to final payment, the Contractor shall submit a Guarantee of his work to be free from defect in materials and workmanship. This Guarantee shall be for a period of **three (3) years** and shall be signed by a Principal of the Contractor's firm and sealed if a corporation.
- D. Maintain the existing Smart Choice Limited Lifetime Warranty (**40-year warranty with 4-year protection period**) on the adjacent, not-in-contract asphalt shingle roofs installed in 2012 by Eagle Roof Services, LLC of Suffield, CT. Coordinate manufacturer inspections before and after the work as needed.
- E. Maintenance: Along with the issuance of the warranty, a set of instructions shall be included detailing preventative maintenance requirements on the part of the building owner and noting a list of harmful substances, which may damage the roofing membrane.
- F. Identification Plate: at the completion of the job, mount an identification plate in a visible location at the point of the roof access. Fabricate plate of durable material such as 1/8" routed melamine plastic or 18-gauge stamped metal with the following information:
1. Contractor's name and address.
  2. Contractor's telephone number to be called for emergency or maintenance.
  3. Dates of Contractor's maintenance agreement for all roofs.
  4. Name and dates of manufacturer's guarantee for all roofs.

1.07 QUALITY ASSURANCE

- A. Installer Qualifications: Approved by manufacturer to install manufacturer's products
- B. Acceptable Products: Provide primary roofing products, including each type of sheet, all manufactured in the United States, supplied by a single manufacturer which has been successfully producing the specified types of primary products for not less than 10 years. Provide secondary or accessory products which are acceptable to the manufacturer of the primary roofing products.
- C. Product Quality Assurance Program: Primary roofing materials shall be manufactured under a quality management system that is monitored regularly by a third-party auditor under the ISO 9001:2000 audit process. A certificate of analysis for reporting/confirming the tested values of the actual material being supplied for the project will be required prior to project close-out.
- D. Agency Approvals: The proposed roof system shall conform to the following requirements. No other testing agency approvals will be accepted.
1. Underwriters Laboratories Class A acceptance of the proposed roofing system.
  2. Factory Mutual Approval Standard 4470 listing for the proposed membrane system. The roof membrane configuration shall be approved by FM Global for Class 1-SH (severe hail) exposure. The roof shall be approved by FM Global for minimum ratings listed under JOB CONDITIONS.
  3. The Contractor shall hire an FM Global approved independent testing agency and pay for roof system testing per FM 1-52. Acceptance of applicable above deck roofing assemblies by FM Global is achieved by satisfactory completion of an uplift test. Contractor should be present during testing to make watertight any destructive test areas.
  4. Notify FM Global two (2) weeks ahead of proposed testing.
- E. Project Acceptance:
1. Submit a completed manufacturer's application for roof guarantee form along with shop drawings of the roofs showing all dimensions, penetrations, and details. The form shall contain all the technical information applicable to the project including deck types, roof slopes, base sheet and/or insulation assemblies (with method of attachment, and fastener type), and manufacturer's membrane assembly proposed for installation. The form shall also contain accurate and complete information requested including proper names, addresses, zip codes and telephone numbers. The project must receive approval, through this process, prior to shipment of materials to the project site.
  2. FM Global Form x2688 completed by the Contractor and approved by FM Global should be included as part of the project acceptance.
  3. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion and submit report to Engineer.

- F. Scope of Work: The work to be performed under this specification shall include but is not limited to the following: Attend necessary job meetings and furnish competent and full-time supervision, experienced roof mechanics, all materials, tools, and equipment necessary to complete, in an acceptable manner, the roof installation in accordance with this specification. Comply with the latest written application instructions of the manufacturer of the primary roofing products. In addition, application practice shall comply with requirements and recommendations contained in the latest edition of the Handbook of Accepted Roofing Knowledge (HARK) as published by the National Roofing Contractor's Association, amended to include the acceptance of a phased roof system installation.

#### 1.08 DIMENSIONS AND QUANTITIES

All dimensions and quantities shall be determined or verified by the Contractor. The Contract Drawings have been compiled from various sources and may not reflect the actual condition at the time of construction. The Contractor is advised to take all precautions and make all investigations necessary to install the proposed work. The Owner will not consider unfamiliarity with the job conditions as a basis for additional compensation.

#### 1.09 TEST AREAS

- A. Before full-scale work is commenced and separate from any unit price quantities, execute the following work for trial work areas to be reviewed by the Engineer and the Manufacturer's Field Representative.
1. Verify adequate adhesion from vapor retarder to existing, prepared concrete substrates. Test method(s) shall be as recommended by the manufacturer.
  2. Verify adequate adhesion from insulation to vapor retarder, from insulation to insulation, and from coverboard to insulation.

#### 1.10 HOT WORK PROCEDURES

- A. A HOT WORK Permit is required for any operation that involves open flames or producing heat and/or sparks. This includes, but is not limited to: brazing, cutting, grinding, soldering, and welding.
- B. Fully charged, inspected, and approved fire extinguishers shall be on site at all times. No cutting, grinding, or welding of any kind shall proceed without an approved fully charged fire extinguisher.
- C. Make sure construction in the area is non-combustible including insulation.
- D. Remove combustible contents or cover with FM approved blankets or pads.
- E. Follow procedures outlined under FM Global Resources 'Don't Get Burned by Hot Work' and 'Hot Work Permit Form – F2360'

**PART 2 - MATERIALS**

**2.01 ROOFING AND FLASHING MEMBRANES**

- A. EPDM Roofing Membrane: ASTM D 4637, Type I non-reinforced such as:
1. Manufacturers: Subject to compliance with requirements, provide products by the following manufacturers:
    - a. Carlisle SynTec Incorporated – Sure Seal
    - b. Firestone Building Products Company – RubberGard Platinum LSFR
    - c. Versico Roofing Systems Inc. – Versagard
  2. Thickness: **90 mils**, nominal.
  3. Exposed Face Color: Black
- B. The elastomeric sheet membrane shall have the following minimum properties and conform to ASTM D 4637 – Standard Specification for EPDM Sheet Used in Single-Ply Roof Membrane, Type I:

<b>PHYSICAL PROPERTY</b>	<b>TEST METHOD</b>	<b>SPECIFICATIONS</b>
Tolerance on Nominal Thickness, %	ASTM D 412	+/- 10
Tensile Strength, min, psi (Mpa)	ASTM D 412	1425
Elongation, Ultimate, min, %	ASTM D 412	450%
Tear Resistance, min, lbs/in (kN/m)	ASTM D 624 (Die C)	200
Factory Seam Strength, min	Modified ASTM D 816	Membrane Rupture
<b>PHYSICAL PROPERTY</b>	<b>TEST METHOD</b>	<b>SPECIFICATIONS</b>
Resistance to Heat Aging Properties after 4 weeks @ 240°F (116°C)		
Tensile Strength, min, psi (MPa)	ASTM D 412	1415
Elongation, Ultimate, min, %	ASTM D 412	250
Tear Resistance, min, lb/in (kN/m)	ASTM D 624	180
Linear Dimensional Change, max, %	ASTM D 1204	<1.0%
Ozone Resistance	ASTM D 1149	No Cracks
Condition after exposure to 100 ppm Ozone in air for 168 hours @ 104°F (40°C) Specimen is at 50% strain		
Brittleness Temp., max deg. F (deg. C)	ASTM D 746	-49
Resistance to Water Absorption	ASTM D 471	1.5%
After 7 days immersion @ 158°F (70°C) Change in mass, max %		
Water Vapor Permeability max, perm-mils	ASTM E 96 (Proc. B or BW)	2.0



PHYSICAL PROPERTY	TEST METHOD	SPECIFICATIONS
Resistance to Outdoor (Ultraviolet) Weathering Xenon-Arc, 4000 hours exposure, 176°F (80°C) black panel temperature	ASTM D 26	No Cracks No Craziing
Sheet Composition Weight percent of polymer that is EPDM, min, % Weight percent of sheet that is EPDM polymer, min, %	ASTM D 297	100  30

- C. Factory fabricated membrane seams shall be step tapered to achieve a smooth transition across the seam. Seams shall be vulcanized.
- D. Flashing membrane to be used at corners of walls or penetrations shall be of the same manufacturer as the roof membrane and shall be 0.060"-thick uncured elastomer completely compatible with all other components used in the new roofing system. Cured membrane specified in 2.01B shall be used at straight flashing runs. **Seams shall be stripped-in with uncured membrane. Color to match the field roof membrane**
- E. All materials and accessories used to install the roofing and flashing membrane systems shall be of the same manufacturer as the sheet membrane. These materials include, but are not limited to, the following:
  - 1. Surface cleaners and primers
  - 2. Bonding adhesive
  - 3. Splicing cement
  - 4. Lap Sealant
  - 5. Water Cut Off Mastics
  - 6. Caulking and sealants
  - 7. Pipe seals
  - 8. Walkway Pads
  - 9. Membrane termination strips, bars, plates, and fasteners
  - 10. Prefabrication flashing components
  - 11. T-Joint membrane patches
- F. All membrane manufacturer's required details shall be considered a part of this project and incorporated into the project details by the Contractor.

2.02 ROOF PROTECTION MEMBRANE

- A. Membrane for the grease vent protection areas shall be:
  - 1. A non-reinforced, polymer-based elastomeric overlayment membrane that is compatible with the EPDM roof membrane and offers increased resistance to hydrocarbons, solvents, grease, and oils.
  - 2. Basis of design is a 60-mil thick polyepichlorohydrin membrane.

### 2.03 BASEBOARD

- A. Fire-rated baseboard shall be 5/8" thick, glass mat faced, moisture resistant, non-combustible, gypsum core board such as:
1. Dens-Deck Prime Fireguard Type X as manufactured by Georgia Pacific
  2. GlassRoc by CertainTeed
  3. Securock by the United States Gypsum Company

Or approved equal. The boards shall be a maximum of 4' x 8' in size and shall conform to ASTM E84. Boards shall be square with uniform thickness and dimensions. The membrane manufacturer shall approve the board in writing. A copy of the written acceptance shall be forwarded to the engineer.

### 2.04 VAPOR RETARDER

- A. The vapor retarder shall be a minimum 32 mil, self-adhered membrane as required to satisfy FM Global RoofNav assembly and obtain the manufacturer's warranty. Provide related accessories including primer and sealants for application to the substrate. The vapor retarder membrane shall be approved in writing by the membrane manufacturer for the specified warranty and to meet Factory Mutual RoofNav approvals. A copy of the written acceptance shall be forwarded to the Engineer.
- B. For application direct to concrete deck areas:
1. High-quality asphalt solvent blend primer for application to concrete and metal surfaces shall be provided by the selected membrane manufacturer. Water based primers are not allowed.

### 2.05 ROOF INSULATION

All roof insulations proposed for this project shall be approved in writing by the membrane manufacturer for use with their membrane and as required to achieve the required roofing warranty.

- A. Flat Stock and tapered polyisocyanurate insulation shall be skinned with factory-applied fiberglass glass mat felt as supplied by the membrane manufacturer as required to meet membrane manufacturer's and FM Global requirements.
1. The polyisocyanurate insulation shall have a minimum aged R-Value of 5.7 per inch as required to meet the Long Term Thermal Resistance (LTTR) value in accordance with ASTM C518. Provide multilayer flat stock insulation to achieve **5-1/2" (R-30 minimum @ 5.7 per inch)** total thickness. The minimum flat stock insulation thickness shall be 1-1/2" for the field of the roof.
  2. Tapered insulation shall be as required to provide a minimum 1/2" per foot at sump crickets. A flat stock base layer may be required.
  3. Tapered insulation shall meet the required LTTR value in accordance with ASTM C518 as described above.

4. The polyisocyanurate insulation board shall conform to ASTM Specification C 1289, Type II, Class 1, Grade 3 (25 psi minimum).
  5. Adhered polyisocyanurate insulation board size shall be 4' x 4' square and of uniform dimension. Mechanically attached insulation board size may be 4' x 8'.
  6. Insulation fillers shall be of the thickness required to match surrounding insulation when step tapering tapered edge strips.
  7. Polyisocyanurate insulation shall be approved in writing by the roofing membrane manufacturer that the methods of attachment are covered under the membrane manufacturer's labor and material warranty. Copies of the written acceptance shall be forwarded to the Engineer.
- B. Wood fiberboard insulation for use as tapered edge strips under cover boards:
1. Fiberboard shall be high density; non-asphalt impregnated and conforms to ASTM C208-95 Specifications.
  2. Tapered edge strips shall be 12" or 18" wide and 1-5/8" thick, tapering to a feathered edge.
  3. Fiberboard insulation shall be approved in writing by the membrane manufacturer. A copy of the written acceptance shall be forwarded to the Engineer.

#### 2.06 FASTENERS FOR INSULATION SECUREMENT

- A. A threaded #12 or #14 fastener with a #3 Philips drive used with steel and wood roof decks, or as required to meet the specified warranty and Factory Mutual RoofNav Approvals.

#### 2.07 COVERBOARD

- A. Adhered cover-board insulation shall be 1/2"-minimum thick, high-density polyisocyanurate or cement board as required to satisfy FM Global RoofNav assembly and obtain the manufacturer's warranty. Wood fiber or gypsum cover boards will not be accepted. The boards shall be a maximum of 4' x 4' in size and conforming to FM 4450 and FM 4470. Boards shall be square with uniform thickness and dimensions. The board shall be approved in writing by the membrane manufacturer for the specified warranty and to meet Factory Mutual RoofNav approvals. A copy of the written acceptance shall be forwarded to the Engineer.
- B. Cover board shall be adhered @ 12" on center in the field and 6" and 4" at the perimeters and corners, respectively, unless otherwise noted by FM Global.

#### 2.08 COLD ADHESIVE FOR COVERBOARD SECUREMENT

- A. Adhesive to adhere the cover board system shall be a two component, cold-process, asbestos free, low-rise polyurethane foam adhesive conforming to ASTM D276, D2556, D1875, D429, D816, D1876, D412. Adhesive and ribbon spacing shall meet the specified ratings, with enhancements in corners and perimeter

zones and shall be approved in writing by the membrane manufacturer and included as part of the warranty coverage and FM Global approvals. Proper cold weather application processes shall be used as required by the manufacturer.

## 2.09 FASTENERS

- A. Refer to Section 06 10 00 for fastener embedment and pull-out resistance testing at wood decks.
- B. Pre-drilling and installation of Fasteners for mechanical roof attachment shall not penetrate the underside of the existing wood deck.
- C. In general, fasteners, straps and other hardware shall be copper, brass, stainless steel, galvanized steel, or fluorocarbon coated steel. Galvanizing shall be hot dip in accordance with ASTM A153 specifications. Electro-galvanized items shall not be used.
- D. All accessories, including, but not limited to nails, screws, clips, fastening strips, etc. shall be completely compatible with the material being fastened to prevent galvanic reaction and premature deterioration.
- E. Nails for membrane termination shall be stainless steel, large head (3/8") annular ring roofing nails of sufficient length to penetrate the wood blocking 1-1/4" minimum.
- F. Nails for flashing securement at wood substrates shall be No. 12 Stubbs gauge, large head, threaded shank, stainless steel nails, of sufficient length for 1-1/4" embedment.
- G. Fasteners for terminating roof membrane and flashing at masonry substrates shall be minimum 1-1/2" long by 1/4" diameter removable stainless-steel drive pins in zinc sheaths. Embedment into substrate shall be 1-1/4" minimum.

## 2.10 BONDING ADHESIVE

- A. Manufacturer's standard bonding adhesive meeting State of Connecticut Low VOC regulations and FM Global assembly requirements.

## 2.11 SEALANT AND ACCESSORIES

- A. Sealant required incidental to concealed sheet metal, flashing and roofing work shall be butyl rubber based non-skinning sealant.
- B. Sealant for use at all exposed locations shall be a two-part urethane conforming to ASTM C 920, Type M, Grade NS, Class 25, Uses NT, M, A, and O, such as NP-II by Sonneborne, Dymeric 240 FC as manufactured by Tremco, Dynatrol II by Pecora, or approved equal.

## 2.12 EXPANSION JOINT COVERS

- A. Flexible, waterproof, pre-fabricated joint bellows composed of closed cell foam and 0.060" EPDM membrane with stainless steel flanges for mechanical securement.
- B. Size to accommodate existing building joint.

## 2.13 REPLACEMENT ASPHALT ROOFING

- A. Replacement asphalt shingles, needed at transitions to the existing, not-in-contract roof areas shall match the existing:
  - 1. GAF "Timberline HD"
  - 2. Color to match existing.
- B. Underlayment: 30# ASTM D226 or D4869 felt, Type 1
- C. Self-adhering modified bitumen base sheet shall conform to ASTM D 1970
- D. Nails for shingles shall be minimum 12-gauge shank with 3/8" diameter head and a length to penetrate through the roofing materials and a minimum of 3/4" into the roof sheathing. Where the roof sheathing is less than 3/4" thick, the nails shall penetrate through the sheathing. Fasteners shall comply with ASTM F 1667.
- E. Fasteners for securing felt underlayment shall be plastic capped galvanized nails.

## 2.14 GLAZING

- A. Insulated glazing achieving minimum U-factor of 0.50
- B. Laminated for impact resistance to resist Severe Hail. Glazing shall pass ASTM E1886 Basic Protection for Wind Zone 1 using Level A missiles (2g steel balls) or FM Global Simulated Hail Resistance Test.
- C. Structural sealant for glazing joints shall be a one-component, low-modulus, neutral-cure structural silicone – Type S, Grade NS, Class 100/50, Use NT, A, G, and O.
- D. Owner to approve glazing aesthetic based on samples provided.

## PART 3 - EXECUTION

### 3.01 GENERAL WORKMANSHIP

- A. Do not deliver to site or install any material or system that has not been approved. Materials installed without approval may be required to be removed.

- B. The prepared roof deck surface must be dry, clean, and smooth. All loose, poorly adhered, or deteriorated materials shall be removed prior to installing the new insulation. Personnel shall be free of bitumen contaminants when installing the new roof membrane. Provide dryers, if necessary, to dry deck surfaces prior to installing new work. Open flame devices shall not be used.
- C. Maintain temporary protection of the new and existing roof system. The roof system will be cleaned to the satisfaction of the A/E, Owner, and/or CA prior to final payment. All areas of stained membrane will be cut out and replaced at no additional cost to the Owner. Multiple patches in close proximity will not be acceptable and will require one large patch.
- D. Comply with the manufacturer's written instructions and these Specifications for all renovations and associated work.
- E. Flashings shall be installed along with the membrane to assure weather tight termination.
- F. Partial or unmarked cans or rolls of materials cannot be used.
- G. Handle materials to prevent damage to building components and project site areas.
- H. Do not cut or dilute any material unless approved by the Engineer in writing prior to use.
- I. Keep covers tightly sealed on all canned and evaporative products to prevent premature curing.
- J. Do not store rolls of membrane or flashings on the roof without the written consent of the A/E, Owner, and/or CA's representative.
- K. The Contractor is cautioned to investigate all existing conditions and materials of construction.
- L. Restrict traffic on completed roof areas. Coordinate work to prevent trafficking by working toward roof edges and access ways. Should access to completed roof areas be necessary, provide protection for trafficked areas
- M. Do not apply primer or adhesive during inclement weather, when temperature is below 40 degrees F, or when materials are above or below specified application temperatures.
- N. Do not place EPDM in contact with incompatible materials, such as asphalt roof cement, oil, creosote, or penta-based materials

### 3.02 DECK PREPARATION

- A. Allow moist deck sections to dry prior to application of roof insulation. Open flames are strictly prohibited from the roof areas.

- B. Ensure that deck surface is clean of all debris and roofing materials.
- C. Coordinate with Section 03 01 00 Concrete Restoration for deck repair requirements.
- D. Coordinate with Section 06 10 00 Rough Carpentry for deck replacement and refastening requirements.
- E. Coordinate with Section 07 62 00 to provide closure of wood deck at perimeter masonry walls.

### 3.03 INSTALLATION OF SELF-ADHERED VAPOR RETARDER

- A. The vapor retarder shall be adhered over properly prepared clean, dry thermal barrier base board.
- B. Apply a manufacturer approved adhesive primer over the properly prepared base board prior to the installation of the vapor retarder.
- C. All seams shall be overlapped and taped. Side laps and end laps shall be a minimum of 2" and 6", respectively.
- D. The vapor retarder shall be sealed to all penetrations and perimeters in accordance with the manufacturer's requirements.

### 3.04 INSTALLATION OF INSULATION SYSTEM – (ADHERED)

- A. The multi-layered polyisocyanurate insulation and cover board system shall be installed on properly prepared clean, dry surfaces.
- B. Comply with membrane roofing system manufacturers and FM Global written instructions for installing roof system.
- C. Insulation boards shall be free of defects including but not limited to, broken corners, improperly adhered facers, excessive moisture, dimensional irregularities, and the like. Defective insulation boards shall be marked and immediately removed from the site.
- D. Install the insulation boards in cold adhesive atop the previously installed base layer(s). Stagger all end joints to the middle of the long dimension of adjacent insulation boards and stagger insulation layer to layer.
- E. The minimum dimension on cut insulation boards shall be 12" with a minimum surface area of 2 square feet. Maximum size of adhered insulation is 4'x 4'. Only full-sized insulation boards shall be used at roof perimeters and corners.

- F. All insulation boards shall be installed tightly butted to adjacent insulation, roof to walls or wood blocking. If gaps greater than 1/8" exist between boards the board shall be cut out and replaced.
- G. Both layers of insulation board shall utilize cold adhesive for system attachment. Install the insulation boards atop the properly prepared vapor retarder and apply the adhesives as recommended by the adhesive manufacturer. Upon installation of the insulation boards, immediately "walk" the insulation into place to spread the adhesive for maximum contact.
- H. Ballast the boards to prevent cupping until adhesive set is achieved. Redistribute ballast to ensure full bonding of the system. Poorly adhered insulation shall be removed and replaced at no additional cost to the Owner
- I. Remove a section of newly installed insulation board to confirm adhesion to the prior layer of insulation. The Contractor shall have the manufacturer's representative on site at the start of construction to confirm application rates and compatibility of the products.
- J. Construct tapered insulation where shown on the Contract Drawings as required direct all run-off water to roof drainage scuppers. Set tapered insulation in cold adhesive prior to setting cover boards, or as otherwise required by the roof membrane manufacturer to maintain the specified warranty.
- K. Utilize fiberboard tapered edge strips and polyisocyanurate fillers to match insulation thicknesses as needed.

### 3.05 INSTALLATION OF INSULATION SYSTEM – (MECHANICALLY ATTACHED)

- A. The multi-layer insulation system shall be installed on properly prepared, clean, dry surfaces.
- B. Multiple layers of flatstock insulation are required with all joints staggered between layers.
- C. Do not install more insulation/underlayment than can be covered by membrane in the same day.
- D. Insulation boards shall be free of defects including but not limited to, broken corners, improperly adhered facers, excessive moisture, dimensional irregularities, and the like. Defective insulation boards shall be marked and immediately removed from the site.
- E. All layers of flatstock insulation, tapered insulation, and coverboard shall be secured utilizing mechanical fasteners. Install the coverboard atop the properly prepared insulation board. Fastener spacing shall be 8 per 4' x 8' board with additional fasteners at corners and perimeters.



- F. The minimum dimension on cut insulation boards shall be 12" with a minimum surface area of 2 square feet. Maximum size of insulation is 4' x 8'. Only full-sized insulation boards shall be used at roof perimeters and corners.
- G. Fasteners and fastening plates are required for insulation securement. The fasteners are to be used with 3" diameter insulation fastening plates approved by the membrane manufacturer.
- H. Insulation and coverboard shall be mechanically fastened to the roof deck at the minimum rate of one fastener and plate per every 4 square feet (minimum of 8 fasteners in a 4' x 8' board) or as required to meet manufacturer requirements and prevent cover board cupping.
- I. Utilize tapered edge strips and insulation fillers at drain locations. Step taper the surrounding insulation system down to the drain bowl location as shown on the Detail Drawings and approved Shop Drawings.
- J. Provide insulation crickets at up-slope locations of roof top penetrations to prevent ponding water and provide positive slope toward the drainage system as shown on the Contract Drawings and approved Shop Drawings.
- K. Provide insulation crickets between drains to provide positive slope to drain as shown on the Contract Drawings and approved Shop Drawings.
- L. All insulation boards shall be installed tightly butted to adjacent insulation or wood blocking. If gaps greater than 1/8" exist between boards the board shall be cut out and replaced.

### 3.06 COVERBOARD INSTALLATION

- A. Install cover board in cold adhesive applied in strict accordance with the adhesive manufacturer's printed installation instructions to achieve the required warranty.
- B. Cover board shall be adhered at 12" on center in the field and 6" and 4" at the perimeters and corners, unless otherwise noted by FM Global.
- C. Install the cover board and immediately "walk" the system into place to spread the adhesive for maximum contact. Stagger all end joints to the middle of the long dimension of adjacent boards, 24" minimum. Continue to "walk" the cover board every 5 to 7 minutes until firm adhesion is achieved.
- D. Ballast the boards to prevent cupping. Redistribute ballast to ensure full bonding of the system. Poorly adhered cover boards shall be removed and replaced at no additional cost to the Owner
- E. Ensure that boards are fully adhered prior to application of roof membrane.

### 3.07 ADHERED MEMBRANE INSTALLATION

- A. It is the intent of this Specification Section to provide the Owner with a new, fully adhered membrane, bonded to the insulation, of sufficient bond strength to resist FM Global uplift pressures as defined in FM Data Sheet 1-28, current edition.
- B. Confirm that all cover board joints have been sealed with the recommended tape prior to the installation of the bonding adhesives.
- C. Cover boards shall be swept and blown clean of all dust prior to applying bonding adhesives.
- D. Refer to Section 06 10 00 – Rough Carpentry, concerning the installation of the wood blocking, nailers and similar accessory woodwork. Confirm the proper installation of the wood blocking, nailers and similar accessory woodwork. Be sure all loose or deteriorated bituminous substances are removed with the original system. Clean any items designated to remain of all remaining bitumen or cover with acceptable buffer material.
- E. Install fully adhered elastomeric roofing on all roof areas designated to receive such. Install membrane system in accordance with the recommendations and requirements of the membrane materials manufacturer, as amended in these Specifications. Follow manufacturer requirements concerning application rates for cleaners, solvents, adhesives, and similar materials. The application rates for these items given in these Specifications are to be considered nominal and the actual rates will vary from manufacturer to manufacturer.
- F. Position roofing membrane without stretching over the insulation. Lay sheets in a shingle fashion. Allow the membrane to relax for minimum one-half hour before bonding. Fold the sheet back onto itself so that one-half of the underside of the sheet is exposed. It is essential that the fold in the sheet be smooth, with no wrinkles or buckles, because these could cause wrinkles in the sheet during installation. Apply the bonding adhesive in accordance with the manufacturer's published instructions to both the sheet and the substrate, using a 9" plastic core paint roller. Apply the bonding adhesive evenly avoiding globs and puddles. Correct application of the bonding adhesive will render approximately 60 square feet per gallon of finished surface coverage. This is a contact type adhesive and includes coating for the membrane and coating on the substrate. Allow the adhesive to dry until tacky; the adhesive must not string or stick to a dry-finger touch. Roll the coated membrane into the adhesive, being careful to avoid wrinkles. Brush down the bonded half of the sheet with a push broom to achieve maximum contact. Fold back the unbonded half of the sheet and repeat the bonding procedure. No wrinkles shall be allowed in the completed application. Wrinkled sheets shall immediately be removed and replaced and not patched. Do not apply bonding adhesive in areas that are to be spliced to flashings or adjacent sheets. Apply all sheets in the same manner, lapping adjacent sheet a minimum of 6 inches.

- G. Splice adjacent sheets in accordance with the manufacturer's written instructions using the manufacturer's double-sided seam tapes (minimum 6" inches wide). Clean areas to be spliced of all talc, dirt and other foreign substances using clean rags with manufacturer's splice wash cleaner or other manufacturer's recommended cleaner. Clean all seam areas at least twice in two separate applications with new rags and cleaner each time. Change the rags and cleaner frequently. It is imperative that these seam areas be totally clean. Install manufacturer's in-seam sealant to cleaned seams as recommended by the membrane manufacturer. Apply splice tape for the full width (minimum 6") of the lap splice. Clean the completed splice for a distance of 8" and apply 6"-wide flashing membrane over completed field splice.
- H. Press the bonded sheet firmly in place with a large foam-covered lawn roller. Fold back the remaining unbonded half of the sheet and repeat the bonding procedure.
- I. The Contractor shall flash all roof drains in conjunction with the new roof system. Extend membrane 1/2" minimum inside clamping ring with a continuous full bead of water cut-off mastic under the membrane. Ensure installation of roofing membrane will not allow for the penetration of mechanical fasteners within the central sump location.
- J. Nail off membrane, after relaxing, adhering, and splicing, along all perimeters and around all flashing units. Membrane shall be nailed off with the hook strip flange along perimeters. The membrane at all flashing locations shall be nailed off 6" on center maximum with the specified roofing nails through tin discs. In areas where no metal flanges are installed (such as at roof to wall details), the nailing shall be reduced to 4" on center maximum. All nailing shall be held back 2" from the edge of the membrane. Vertical nailers, when used, shall be fastened 8" on center. Extend membrane behind vertical nailers and secure

### 3.08 MEMBRANE FLASHING

All flashings shall be installed concurrently with the roof membrane in order to maintain a watertight condition as the job progresses. No temporary membrane flashings shall be allowed without the prior written approval of the A/E, Owner, and/or CA. Approval, if given, will only be for specific locations on specific dates.

- A. Ensure that all substrates are free from contaminates prior to the installation of the new flashing membranes. Install the manufacturer's buffer or protection sheets as required.
- B. Follow the membrane manufacturer's requirements and recommendations and these specifications. Do not proceed with work until all shop drawings and submittals are reviewed.
- C. Cured membrane shall be used for flashing purposes as much as practical. Uncured sheets are to be used at, inside and outside corners, seams in flashings or at any other location where forming of membrane flashings is required.

Prefabricated components are to be used where practical and detailed at vent pipes, hot pipes, pitch pockets, etc.

- D. Flashing sheet shall be spliced to the membrane first, and then bonded to the mating surface. Totally clean the roof membrane area to receive flashing sheet using new, clean rags and manufacturer's splice wash cleaner. All talc, dirt, excess bonding adhesive and other foreign material shall be totally cleaned from the roof membrane sheet. Clean all seam areas at least twice in two separate applications with new rags and cleaner each time. After cleaning, apply splicing cement to both the underside of the flashing sheet and the prepared roof membrane for a width of minimum 6". Be sure cement is not on bonding adhesive areas.
- E. Apply bonding adhesive to surface of wood, metal, masonry or other material or surface to be flashed. Also apply bonding adhesive to flashing membrane making sure bonding adhesive is not applied to splice area of flashing and using longest possible lengths of flashing membrane. Apply bonding adhesive using rollers or brushes 100% to all surfaces at a smooth, uniform rate, free of holidays, light spots, globs, or similar irregularities, all at the manufacturer's application rate. Allow two surfaces of adhesive to dry to a tacky condition, such that adhesive does not stick or string when touched with a dry finger.
- F. After bonding adhesive has set on both surfaces, roll flashing onto surface carefully to prevent wrinkles, fishmouth, bridging or similar flaws. Unless otherwise detailed, top of membrane flashings must be minimum 8" above the surface of the roof membrane, 3" minimum above the bottom of metal counterflashings, and minimum 3" past the limits of nail heads or other fasteners. Membrane flashings shall extend the full width of horizontal metal flashing flanges (i.e., gravel stops). After setting, roll membrane into place using a 2" wide steel roller and heavy hand pressure. Roll 100% of the surface to assure total adhesion with no wrinkles or bridging. After rolling, splice vertical or side laps of flashing sheet using minimum 6" wide splices and splicing cement. After applying splicing cement to both mating surfaces of the flashing sheet vertical laps and allowing it to become tacky, roll splice in place as described above.
- G. Install membrane securement disks and fasteners into structural deck(s) or vertical walls at the base of penetrations. Securement disks and fasteners may be required by the membrane manufacturer at the base of tapered edge strips, ridges, or other transitions. Contractor to comply with manufacturer's requirements if more stringent than these specifications.
- H. Inside and outside corners and other changes in direction of flashing sheets shall not be butt-type splices at the point of direction change. All flashing sheets shall be jointed past the change in direction. Inside vertical corners shall be folded with no cuts in the sheet at the corner. Folds shall be "pig's ear" type on flashing sheets entering a corner. Splice shall be made 16" minimum away from corner. Outside vertical corners, such as around curb units, shall extend a minimum of 2" around the corner for each flashing sheet. Contour flashing sheets in place

with light pressure. Flashing sheet may be heated, if ambient temperature is below 60 degrees F, in order to work them in place. Heating shall be done with heat lamp or air gun. No open flames can be used. All flashings shall be installed in accordance with the approved shop drawings and manufacturer's instruction, unless amended. Flashings shall be turned up and over the tops of curbs as much as practical.

- I. Membrane flashing terminating on a vertical surface shall be mechanically fastened at a height not to exceed manufacturer maximum adhered height limitations. Flash over vertical securement.
- J. Strip in all metal flanges such as gravel stops with EPDM. Two ply stripping to be used/apply a 5" wide strip of flashing over which a 9"-wide strip is to be applied. Uncured membrane shall be utilized where required by the manufacturer or by detail conditions. Stripping shall be continuous over the entire flange and extend onto the membrane 6" minimum.
- K. Lap sealant shall be applied daily along all edges of membranes which terminate on the horizontal, gravel stops and similar locations. After proper installation of membrane flashings, clean the area of the lap with the manufacturer's recommended cleaner and apply continuous bead of lap sealant to all seams, including vertical laps of the flashings.

Feather the sealant bead using the preformed trowel. Should seams be found to have weathered beneath ponding conditions, the Contractor will be required to strip-in these seams with 6" stripping.

### 3.09 EXPANSION JOINTS

- A. Flash all expansion joints in accordance with authorized/approved details. Fasten all expansion joint material according to MRSM specifications. Ensure the expansion material has sufficient material to expand to the widest point in expansion without causing undue stress on the expansion joint material.
- B. If the expansion joint is a "pre-formed" system, the manufacturer, description, and a drawing illustrating the method of installation must be included in the contractor's submittals.

### 3.10 PROTECTION MEMBRANE INSTALLATION

- A. Adhere protection membrane to the adhered EPDM roof membrane using low-VOC bonding adhesive.
- B. Do not apply bonding adhesive within 6" of the membrane edge or the underlying membrane, to allow for application of splice tape in accordance with the roof membrane manufacturer's requirements.
- C. Apply protection membrane to all surfaces in the area indicated, including insulation crickets, curbs, drain sumps, penetrations, base flashing membrane, etc.

### 3.11 ASPHALT SHINGLE REPAIRS

- A. Install shingles in accordance with manufacturer's instructions and these specifications.
- B. Apply a starter course of shingles with exposure surface cut off. Install bottom edge of starter course aligned with the edge of the roof over the modified bitumen and felt underlayment.
- C. Beginning at the starter course, install asphalt shingles. Apply subsequent courses of singles allowing exposure of the course below. Stagger butt joints 6" minimum between courses. Nails shall be below the line of wind seal adhesive.
- D. Each course of shingles shall be installed neat and straight with no visible variation between adjoining shingles or cut-out lines.
- E. Partial shingles may be used only along edge locations and as required to stagger butt joints and shingle cutouts.
- F. All shingles will be installed by hand nailing methods only. The use of nailing guns will not be allowed.

### 3.12 WATERSTOPS

- A. All flashings shall be installed concurrently with the roof membrane in order to achieve a watertight condition as the work progresses. When a situation arises where a break in the day's work occurs in the central area of a roof, a temporary waterstop shall be constructed to provide a 100% watertight seal utilizing a raised temporary waterstop. Sweep back and totally clean the existing roof and set a 2" x 4" stud atop the prepared area in roof cement. Where stopping work on the new system, maintain the stagger of the insulation joints by installing partial fillers.
- B. Carry the new membrane up and over 2" x 4" waterstop. Seal the edge of the membrane in a continuous heavy application of roof cement. Weight the membrane down in the sealant with a 2" x 10" wood member with ballast on top. Ballast should be approximately 20 lb./l.f.
- C. When restarting work, remove all sealant, membrane, insulation fillers, etc. from the work area. Do not reuse any of the material in the new work. Cut off contaminated membrane and dispose of immediately. If inclement weather occurs while a temporary waterstop is in place, the Contractor shall provide the labor necessary to monitor the situation to maintain a water tight condition. Do not impede drainage when installing waterstops.

### 3.13 GLAZING INSTALLATION

- A. Remove exterior mullion caps, glazing, sealants, glazing compound, residue, and fasteners from the existing skylight units, exposing the structural frame.

- B. Review and report to the Engineer the condition of existing framing, fasteners, etc. during removal as it pertains to the skylight restoration scope.
- C. Contractor to verify-in-field all skylight dimensions for the sizing of replacement glazing, including tolerances to account for thermal expansion and contraction.
- D. Set new glazing into the prepared skylight framing in a continuous bed of structural sealant with integral EPDM shims.
- E. Coordinate with the installation of head and sill flashing and closure in accordance with Section 07 62 00.
- F. Clean and prepare edges of glazing to receive new mullion flashing and caps, including masking material for joint sealants.
- G. Apply structural silicone between glazing panels and to fill mullion cavity.
- H. Install sheet metal mullion caps and provide tooled bead of silicone at edges.
- I. Mullion fasteners to have EPDM gasketed washers.

#### 3.14 CLEAN-UP

- A. All floor and adjacent areas, both interior and exterior, damaged, or stained by the installation of the roofing work shall be repaired and cleaned of all dust, debris, and any other materials to the Owner's satisfaction.
- B. The Contractor shall not demobilize the site until the completed work is toured by the A/E, Owner, and/or CA. Any unsatisfactory items observed will be reported in "punch-list" form. These items shall be corrected immediately by the Contractor prior to demobilization from the job site. Final payment will not be made until all punch list items are complete and guarantees have been received.
- C. All scaffolding, barriers, temporary facilities, and the like shall be removed upon completion of the work. Areas damaged as a result of the Contractors equipment shall be restored to their original condition, all to the satisfaction of the Owner.
- D. Refer to the Close-Out Procedures described in Division One for additional information.

**END OF SECTION**

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## PART 1 - GENERAL

### 1.01 IN GENERAL

The General Conditions and all parts of the Bid and Contract Documents are made part of this Section as if fully repeated herein.

### 1.02 RELATED WORK SPECIFIED ELSEWHERE:

- A. Divisions 0 and 1 of the Project Manual
- B. Section 02 41 00 - Selective Demolition
- C. Section 02 82 13 - Asbestos Containing Roofing Material Abatement
- D. Section 02 83 00 - Lead Paint Activity
- E. Section 02 84 33 - Removal and Disposal of PCBs
- F. Section 04 50 00 - Masonry
- G. Section 06 10 00 - Rough Carpentry
- H. Section 07 52 00 - Elastomeric Membrane Roofing
- I. Section 22 20 00 - Plumbing
- J. Section 50 00 00 - Project-Specific Available Information

### 1.03 SUMMARY OF WORK:

- A. Install sheet metal flashings in conformance with Factory Mutual Data Sheet 1-49 (latest issue).
- B. Provide ANSI/SPRI ES-1 shop-fabricated, tested edge metal/facia to complete roofing systems.
- C. Provide ANSI/SPRI ES-1 shop-fabricated, tested coping at Building 460 parapet, Roof Area C.
- D. Provide new edge scupper at each drain that is located near the roof edge. Coordinate with 06 10 00 – Rough Carpentry for installation of roof edge blocking.
- E. Provide new stainless-steel skirt flashings at all mechanical curbs.
- F. Provide new stainless-steel cap flashings for mechanical RTCU sleepers.
- G. Provide closure of wood deck to masonry perimeter walls.
- H. Provide transition flashing between low-slope Roof Area A and the pitched roof to the east (not in contract).
- I. Restore the existing clerestory skylights with new sheet metal flashings, standing seam wall panels, glazing panels and sealants, and joinery.
- J. Coordinate with Sections 06 10 00 Rough Carpentry and 07 52 00 Elastomeric Membrane Roofing for raised clerestory sill and penthouse enclosures.

- K. Provide new sill flashing at the existing curtainwall sill at the south gable end of Building 470 above Roof Area B.
- L. Remove and replace one (1) existing penthouse window with a new wind-driven rain resistant aluminum louver.
- M. Provide sheet metal and membrane flashings Building 460 penthouse enclosure details.
- N. Provide all necessary temporary protection for the roof systems to prevent damage to the interior and for weather protection. Coordinate with work phasing and Owner notification requirements in Division 01 Specifications.
- O. Remove only as much of the existing roofing and flashing as can be made weather tight within the same day's work.
- P. Follow the FM Global Red Tag Permit System for any shut-down of the existing fire protection system(s). Refer to Section 50 70 00, FM Global publication "Managing Fire Protection System Impairment."
- Q. Clean and restore all areas affected by the work.

#### 1.04 JOB CONDITIONS

- A. SPECIAL NOTE: Portions of the existing flashings and roofing membrane have been tested and found to contain Asbestos Containing Materials (ACM). The Contractor shall comply with the National Emission Standard for Hazardous Air Pollutants (NESHAP) regulation published in the Federal Register under 40 CFR, Part 61, subpart M. Specific attention is directed to Appendix A of this regulation entitled, Interpretive Rule Governing Roof Removal Operations. In addition to these regulations, the Contractor shall comply with OSHA Regulation (29 CFR Parts 1910 et al – Occupational Exposure to Asbestos; Final Rule) and all other State and Local guidelines regarding asbestos containing material removal and disposal. For clarification, refer to Section 02 82 13 Asbestos Containing Material Removal.
- B. Lead Paint and Flashings: Lead containing materials were identified at the Work Site. Reference Inspection Report in Section 50 30 00 Hazardous Building Materials Inspection and Inventory. The Contractor shall be responsible for compliance with OSHA lead in construction (29 CFR 1926.62 "Lead Exposure in Construction: Interim Final Rule") and RCRA (USEPA and CT DPH and DEEP) disposal requirements for completion of the demolition and roof replacement work. Lead containing materials shall be managed and disposed by the Contractor in strict accordance to applicable Local, State, and Federal laws.
- C. Polychlorinated Biphenyls: Testing for polychlorinated biphenyls (PCBs) is not required on this project. The existing glazing and sealants at the clerestory

skylight units at Roof Area C are to be removed by the contractor and disposed of as PCB waste.

- D. Coordinate the work in this Section with the work in other sections to maintain a watertight condition and to ensure the orderly progress of work.
- E. Edge metal installation shall be in conformance with FM Global Data Sheet 1-49 and these specifications.
- F. All surfaces to receive flashings shall be thoroughly dry. Should surface moisture such as dew exist, the Contractor shall provide the necessary equipment to dry the surface prior to application. Do not dry with open flames.
- G. Complete metal work in conjunction with roofing and flashing so that a watertight condition exists daily.
- H. Metal shall be installed to provide adequate resistance to bending to allow for normal thermal expansion and contraction.
- I. Metal joints shall be watertight.
- J. Airtight and continuous metal hook strips are required behind metal fascias.
- K. Counter flashings shall overlap base flashings at least 4".
- L. Hook strips shall extend past wood nailers over wall surfaces by 1.5"-minimum and shall be securely sealed from air entry.
- M. End dams shall be provided at limits of through-wall flashing locations.

#### 1.05 SUBMITTALS

- A. Submittals shall be made in accordance with Division 1.
- B. The Contractor shall submit the following procedural items with their submittal package:
  - 1. Methods of removal of materials;
  - 2. Temporary protection procedures;
  - 3. Fire watch procedures;
  - 4. List of local emergency numbers; and
  - 5. Staging/set-up procedures.
- C. The Contractor shall submit the following samples with their submittal package:
  - 1. 3"X3" samples of each type of metal and flashing to be used.
- D. Shop drawings for each shop or field fabricated sheet metal component. Submit complete, detailed large scale (min 3: = 1'-0") shop drawings for each shop or field fabricated sheet metal component indicating profiles, seams, terminations, dimensions, attachment, and interface with other materials and substrates.

- E. Louver Shop drawings: Include plans, elevations, sections, details, and attachments to other Work. Verify louver openings by field measurements before fabrication and indicate measurements on Shop Drawings.
- F. Manufacturer's available colors, as required.

#### 1.06 TEST AREAS

- A. Before full scale work is commenced and separate from any unit price quantities, execute the following work for trial work areas to be located and reviewed by the Engineer as to acceptability of installation:
  - 1. Parapet cap
  - 2. Edge metal
  - 3. Hook strip and cleat
  - 4. Wall panels
  - 5. Ridge flashing
  - 6. Roof transition flashing
  - 7. Skirt flashing, counterflashing, clips
  - 8. Edge scupper
  - 9. Ridge flashing (skylight)
- B. Trial areas shall be repeated until acceptable results are obtained. The accepted work shall be a standard for all subsequent work.

#### 1.07 GUARANTEE

- A. Upon completion of the work, and prior to final payment, the Contractor shall submit a Guarantee of his work to be free from defect in materials and workmanship. This Guarantee shall be for a period of **three (3) years from the date of Substantial Completion**, shall be signed by a Principal of the Contractor's firm, and sealed if a corporation.

#### 1.08 PERFORMANCE REQUIREMENTS

- A. Sheet metal assemblies shall accommodate movement of components without buckling, failure of joint seals, undue stress on fasteners, or other detrimental effects when subjected to seasonal temperature changes and live loads.
- B. Edge metal assembly must be fabricated, tested, and installed in accordance with ANSI/SPRI ES-1 and Test Methods RE-1, RE-2, and RE-3. The Contractor is responsible for the cost of testing.
- C. Once edge metal/coping shop drawings have been approved, the Contractor shall submit them, along with formed samples to a third-party agency to for ES-1 testing.

- D. At completion of the testing, the third-party testing agency shall provide report(s) of the test results to the Engineer with carbon-copy to the Owner and the Contractor.
- E. Louvers: Air-Performance, Water-Penetration, and Wind-Driven Rain Ratings: As demonstrated by testing manufacturer's stock units according to AMCA 500-L.

#### 1.09 DIMENSIONS AND QUANTITIES

- A. All dimensions and quantities shall be determined or verified by the Contractor. The Contract Drawings have been compiled from various sources and may not reflect the actual condition at the time of construction. The Contractor is advised to take all precautions and make all investigations necessary to install the proposed work. The Owner will not consider unfamiliarity with the job conditions as a basis for additional compensation.

#### 1.10 QUALITY ASSURANCE

- A. Factory Mutual Inspections: Contractor shall coordinate and schedule inspections by a Factory Mutual Global representative at the start of roofing installation, interim in-progress and at substantial completion, a minimum of three (3) visits.
- B. Scope of Work: The work to be performed under this specification shall include but is not limited to the following: Attend necessary job meetings and furnish competent and full-time supervision, experienced mechanics, all materials, tools, and equipment necessary to complete, in an acceptable manner, the installation in accordance with this specification.
- C. Third Party QA Certification: "Authorized Fabricator" certified and inspected by 3rd party ANSI/SPRI authorized testing laboratory for quality assurance. Current annual certificate required.
- D. Installer Qualifications: Company is a "Certified Installer" in the installation of Edge Metal Products specified in this section.
- E. It will be the responsibility of the roofing contractor to initiate and maintain a QC program to govern all aspects of the installation. The project foreman and or supervisor will be responsible for the daily execution of the QC program.
- F. If inconsistencies in the quality of the installation are found, all work shall cease until corrective actions are taken to ensure the continuity the installation.
- G. The contractor shall maintain an adequate number of skilled workers who are thoroughly trained and experienced in the necessary crafts, and who are completely familiar with the specified requirements and methods necessary for the

proper performance of the work. No allowance will be made for lack of skill on the part of the workers.

#### 1.11 REFERENCES

- A. CDA Copper Design Manual, published by the Copper Development Association. See also "Copper and Common Sense – Sheet Copper Design Principles and Construction Techniques Manual", Published by Revere Copper Products.
- B. SMACNA - Architectural Sheet Metal Manual of the Sheet Metal and Air Conditioning Contractors National Association, Inc.

### PART 2 - MATERIALS

#### 2.01 SHEET METAL AND PREFORMED FLASHINGS

- A. Copper shall be minimum 20 oz. per square foot, unless otherwise noted, and conforming to ASTM B370. Copper shall be 1/8 hard, Temper H00 except Temper 060 where hand forming is required. Refer to Fabrication Schedule for requirements.
- B. Stainless steel shall be 20 and 24-gauge AISI 18-8 Type 304, 2D finish. Sheet length shall be 8' maximum.
- C. Aluminum shall be 0.040" and 0.050" thick. Aluminum shall have a mill finish for concealed items. Provide a polyvinylidene fluoride finish for exposed aluminum. Aluminum shall be 3003 alloy, H-14 temper.
- D. All accessories, including but not limited to nails, screws, and clip strips shall be stainless steel and completely compatible with the surrounding metal to prevent galvanic reaction.
- E. Nails for flashing securement at wood substrates shall be No. 12 Stubbs gauge, large head, threaded shank, minimum 1-1/4" long.
- F. Rivets shall be 3/16"-diameter copper, aluminum, or stainless steel as required by the metal being secured.
- G. Sealant required incidental to sheet metal and flashing work shall be one-part non-skinning butyl.
- H. Fabrication Schedule
  - 1. 16 Ounce Red Copper:
    - a. Counterflashing
    - b. Reglet flashing

- c. Pourable sealer pocket
  - d. Backer plates
  - e. Cover plates
  - f. Blind nailers
  - g. Temporary drain sleeves
- 2. 20 Ounce Red Copper:
  - a. Parapet coping cap
  - b. Edge metal
  - c. Fascia
  - d. Edge scuppers
  - e. Downspouts, elbows
  - f. Vent pipe flashings
  - g. Continuous Hook Strips/Cleats for 16 Ounce copper
- 3. 24 Ounce Red Copper:
  - a. Downspout straps
- 4. Steel Sheet (fluoropolymer coated) (22 gauge)
  - a. Standing seam wall panels
  - b. Clerestory flashings (mullion caps, base, ridge and rake flashings)
- 5. 20 Gauge Stainless Steel:
  - a. Skirt flashing
  - b. Sleeper flashing caps
  - c. Deck closure
- 6. 24 Gauge Stainless Steel:
  - a. Continuous hook strips/cleats for 20 oz. copper.
- I. Joints shall conform to the following requirements:
  - 1. Flat-lock joints shall finish not less than 3/4" wide.
  - 2. Lap joints subject to stress shall finish not less than 1" wide and shall be soldered and riveted.
  - 3. Unsoldered lap joints shall finish not less than 4" wide.
- J. Soldering:
  - 1. Pre-tin both mating surfaces with solder for a width not less than 1-1/2" of uncoated copper or stainless steel.
  - 2. Treat other sheet metal required to be soldered in accordance with metal producer's recommendations.
  - 3. Completely remove acid and flux after soldering is completed.
  - 4. All lap or lock seams shall be pre-tinned.
- K. Expansion and Contraction Joints:
  - 1. Fabricate in accordance with the Architectural Sheet Metal Manual recommendations for expansion and contraction of sheet metal work in continuous runs.

2. Space expansion and contraction joints for copper and stainless steel at intervals not exceeding 24'.
  3. Fabricate joint covers of same thickness materials as sheet metal served.
- L. Securement Clips:
1. Provide securement clips to secure flashing and sheet metal work over 12"-wide and where specified.
  2. Form securement clips of same metal and one weight heavier as the sheet metal being installed.
  3. Fabricate securement clips from 2"-wide strips. Form end with not less than 3/4"-wide loose lock to item for anchorage. Fold clips over flashing and crimp tightly.
- M. Edge Strips or Continuous Cleats:
1. Fabricate continuous edge strips where shown and specified to secure loose edges of the sheet metal work.
  2. Use material compatible with sheet metal to be secured by the edge strip.
  3. Fabricate in 10' maximum lengths with not less than 3/4" loose lock into metal secured by edge strip.
  4. Fabricate strips for fascia anchorage to extend below the supporting wood construction to form a drip and allow the flashing to be hooked over the lower edge at least 3/4".
  5. Fabricate anchor edge maximum width of 3" or of sufficient width to provide adequate bearing area to insure a rigid installation.
- N. Edges:
1. Finish edges of flashing with a 1/4" hem formed by folding edge of flashing back on itself when not hooked to edge strip or cleat. Use 1/4" minimum penetration beyond wall face with drip for through-wall flashing exposed edge.
- O. Gravel Stops
1. Fabricate in lengths of not less than 8' long and maximum of 10'.
  2. Fabricate internal and external corners as one-piece with legs not less than 2' or more than 4' long.
  3. Fabricate roof flange not less than 4" wide.
  4. Fabricate lower edge outward at an angle of 45 degrees to form drip and as fascia or as counterflashing as shown.
    - a. Fabricate of one (1) -piece material of suitable width for fascia height of 8" maximum or counterflashing lap of not less than 4" over base flashing.
  5. Provide backer and cover plates at joints in the gravel stop with in-seam sealant between all layers.
- P. Flat and lap joints shall be made in direction of flow.
- Q. Sheet metal flashings shall be shop fabricated. All breaks, bends, and hems shall be uniform, clean, straight lines.



1. Flanges shall be 4" wide minimum
2. Drip edges shall be hemmed 3/4" wide minimum and break at a 30-degree angle.
3. Clips shall be 2" wide.
4. Where cleats and clips are fastened to substrate, edge of metal shall be folded back over the fastener head.
5. All flanges to be covered with roofing or flashing membrane shall have a 1/4" minimum hem on the edge.
6. Copper seams shall be formed of a pre-tinned, single lock, crimped, and soldered.
7. Blind nailers shall be 4" wide and hemmed on both edges, folded to 2" wide final dimension.

## 2.02 DECK CLOSURE

- A. Metal deck closure strips for installation at the transition between wood deck planks and brick masonry perimeter walls.
- B. Sheet width shall be 8 inches minimum, to extend 4 inches onto each substrate.
- C. Maximum length shall be 8 feet.

## 2.03 FASTENERS AND ACCESSORIES

- A. All accessories, including but not limited to nails, screws, straps, hangers, and clips shall be copper, stainless steel, or aluminum, and completely compatible with the surrounding metal to prevent galvanic reaction.
- B. Termination Bars – Stainless Steel or Copper
  - a. 1/8" x 1" x 10'-0" lengths
  - b. Fastener holes located at 8" on-center, maximum
  - c. 3/8" flange as sealant receiver

## 2.04 UNDERLAYMENT AND ACCESORIES

- A. Membrane underlayment shall be a butyl rubber based, self-adhering underlayment such as Grace Ultra, as manufactured by W.R. Grace Construction Products or approved equal. Flashing membrane shall be high temperature products for use under sheet metal and slate shingle components. Mastic and primer shall be as approved by the membrane manufacturer. Temporary UV protection and corner fillets shall be as recommended by the membrane manufacturer.
- B. Felt shall be asphalt-saturated rag felt, Type II, No. 30 asphalt felt in accordance with ASTM D 226.
- C. Rosin paper: ASTM D 459. Slip-sheet shall be red rosin paper, 9 to 11.5 mils thick, 4 to 6 lbs. per 100 square foot.

- D. Underlayment Nails: Copper wire nails with low-profile capped heads or disc caps, 1 inch (25 mm) minimum diameter.
- E. Concealed sealant (where required): butyl mastic conforming to ASTM C 1085.

#### 2.05 THROUGHWALL FLASHING ACCESSORIES

- A. Concealed sealant: butyl mastic conforming to ASTM C 1085.
- B. Fabric coated copper flashing shall be 7 oz. copper sheet permanently bonded between two layers of textured, woven high tensile strength glass fabric.
- C. Primers and mastic adhesive required for proper installation of the fabric flashing shall be as specifically recommended by the fabric flashing manufacturer.

#### 2.06 EXTRUDED ALUMINUM RAIN RESISTANT WALL LOUVERS (SQUARE)

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
  - 1. Greenheck
  - 2. Ruskin Company
  - 3. Construction Specialties, Inc.
  - 4. Louvers and Dampers, Inc.
  - 5. Airlite
- B. Stationary Louver:
  - 1. Model: EME420MD as manufactured by Ruskin Company (basis of design)
  - 2. Frame:
    - a. Frame Depth 4 inches
    - b. Material: Extruded aluminum, alloy 6063-T6
    - c. Wall Thickness: 0.081 inch (2.1 mm), nominal
    - d. Extended Sill: 0.081 inch formed aluminum with end dams
  - 3. Blades:
    - a. Style Horizontal sinusoidal
    - b. Material: Extruded aluminum, alloy 6063-T6
    - c. Centers: 3/4 inch (19 mm), nominal
    - d. Double drainable
  - 4. Fabrication:
    - a. Mullion style: Design incorporates visible mullions or frames at the perimeter of the louver and also at certain intervals within the louver perimeter to support the louver blades. Louver blade sightlines are interrupted at the mullion locations. No rear-mounted blade supports are utilized.
  - 5. Assembly:
    - a. Factory assembled louver components. Welded construction.

C. Performance Data:

1. Performance Ratings: AMCA licensed.
  - a. Wind driven rain resistance based on testing 39 inch by 39-inch core area and 5.45sf free area in accordance with AMCA 500.
    1. 50 mph wind velocity, 8 inches/hr. rainfall rate
    2. Water resistance effectiveness: 100 percent (AMCA Class A)
  - b. Free Area: 40 percent, nominal

D. Materials:

1. Aluminum Extrusions: ASTM B 221 alloy 6063-T6.
2. Fasteners: Of same basic metal and alloy as fastened metal or 300 Series stainless steel.
3. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187.
4. Perimeter Sealant shall be a two-part polyurethane conforming to ASTM C 920 Type S, Grade NS, Class 25 Uses NT, M, A and O Specifications such as manufactured by Tremco, Pecora, DOW, or approved equal.

E. FABRICATION, GENERAL

1. Fabricate frames to fit in openings of sizes indicated, with allowances made for fabrication and installation tolerances, adjoining material tolerances, and perimeter sealant joints.
2. Join frame members to each other and to louver blades with fillet welds concealed from view.
3. Join frame members to each other and to louver blades with fillet welds, threaded fasteners, or both, as standard with louver manufacturer, concealed from view.

F. LOUVER SCREENS

1. General: Provide screen at interior face of each exterior louver.
2. Louver Screen Frames: Same kind and form of metal as indicated for louver to which screens are attached.
3. Bird Screening: Stainless steel, 5/8-inch square mesh, 0.040-inch wire.

G. FINISHES

1. Prime Coat: 1. Apply alkyd prime coat following chemical cleaning and pretreatment.
2. 70 percent fluoropolymer-based painted finishes: Coating shall conform to AAMA 2605. Apply coating following cleaning and pretreatment. Cleaning: AA-C12C42R1X. Standard 2-coat
3. Color to be selected by Owner from standard colors available from louver manufacturer.

### PART 3 – EXECUTION

#### 3.01 GENERAL WORKMANSHIP

- A. Refer to the publication, "CDA Copper Design Manual", "Copper and Common Sense" by Revere Copper and Brass and all recommendations of the Sheet Metal and Sheet Metal and Air Conditioning Contractors National Association (SMACNA) concerning methods and materials to be used in the fabrication and construction of sheet metal flashings.
  - 1. All sheet metal sections that are to rest over modified bitumen membranes shall be separated by a slip sheet.
- B. It is the intent of this Specification to utilize the most effective joint configuration with the fewest seams possible to properly install strong, weather-tight metal flashings. Comply with the following standards unless otherwise specified when fabricating metal components to be joined:
  - 1. Prefabricate corners of edge metal, counter-flashings and skirt flashing in one-piece sections with minimum lengths of 18" in each dimension from the corner whenever possible.
  - 2. Whenever one-piece construction is not possible, solderable metals shall utilize interlocked, crimped, and fully soldered seams and joints.
  - 3. Seams and joints of non-solderable metals shall be interlocked, riveted, and completely filled with sealant. Strip in concealed flashing locations with modified bitumen membrane.
  - 4. Provide sheet metal closure components at transitions to rising walls and similar changes in plane for edge metal, expansion joint covers, and other termination flashings. Fully crimp and seal closures to continuous blind nailed cleats.
- C. Shop fabricate sheet metal flashings to the fullest extent possible. Fabricate all breaks, bends, and hems with uniform, clean, straight lines.
- D. Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action at points of contact with other materials.
- E. Do not install bent, twisted, scratched, or otherwise damaged sheet metal fabrications.
- F. Erect sheet metal plumb and level without bulges or waves.
- G. Provide watertight joints to accommodate thermal expansion and contraction.
- H. Fit sheet metal fabrications tight in place. Make corners square and surfaces true and straight in planes.
- I. Secure sheet metal in place using concealed fasteners unless shown otherwise. Lap and seal all joints.

- J. Protect finishes of exposed-to-view sheet metal fabrications. Avoid gouging, scratching, and denting. Use cotton gloves when handling and installing unprotected sheet metal in order to avoid soiling exposed-to-view surfaces.

### 3.02 DECK CLOSURE

- A. Coordinate installation of deck closure strips with brick masonry restoration and replacement and refastening of wood plank decking.
- B. Secure to each substrate using the specified fasteners at 12" on center and lap 2 inches at ends.

### 3.03 EDGE METAL FASCIA AND COPING

- A. Coordinate the installation of new wood blocking and continuous shim on top of the existing concrete parapet with Section 06 10 00 – Rough Carpentry.
- C. Extend flashing membrane over wood blocking and onto the sloped perimeter roof.
- D. Backer and cover plates shall be installed behind all edge metal and coping joints. Sealant shall be applied with full beads between backer plates, edge metal, and cover plates.
- E. Multi-piece fascia layers shall have 3" minimum laps behind pieces above.
- F. Provide blind nailers at exposed ends where fascia's meet rising walls as necessary and other locations as required to provide an aesthetic watertight termination of metal flashings.

### 3.04 STANDING SEAM WALL PANELS

- A. Form panels as pans 16"-inches wide with seams 1-1/2 inches high.
- B. Provide clips within longitudinal seams spaced at 12-inches on center, but no less than two clips per seam.
- C. Provide single lock seams with a rubber or synthetic based in-seam sealant.
- D. Panels shall be uniform and square, with no surface imperfections, bent or damaged surfaces, or similar flaws.
- E. Panels shall be installed true to line, with horizontal lines level and vertical lines plumb.
- F. Seam shall be oriented facing away from predominate wind direction.

3.05 BLIND NAILERS

- A. Fabricate and install blind nailers with a 2" minimum leg inserted behind membrane, edge metal/ fascia, or dormer cladding. Fasten flashing through leg of blind nailer.
- B. Fold blind nailer with 1/2" hemmed edge over fastener.
- C. Provide continuous beads of sealant at back and leading edges

3.06 CONTINUOUS CLEATS AND HOOK STRIPS

- A. Form continuous cleats/hook strips with 3/4" kicks, bent out at a 30-degree angle to the face of wall. Height of continuous cleats/hook strips shall be as indicated on the Detail Drawings and long enough to be fastened into solid blocking and extend 2" minimum past bottom of blocking.
- B. Secure continuous cleats/hook strips to wood blocking with the specified fasteners spaced at 4" on center/staggered.
- C. Provide 1/8" butt joints between hook strip sections.

3.07 SKIRT/COUNTERFLASHING

- A. Install sheet metal skirt and counterflashings where indicated at roof-to-wall terminations, unit curbs, etc. Skirt metal flashings shall be fastened with the specified fasteners.
- B. Secure bottom edges of skirt flashings and counterflashings at 6" on-center.

3.08 POURABLE SEALER POCKETS

- A. Reasonable effort shall be made to eliminate the need for pourable sealer pockets including the removal of existing pockets.
- B. Fabricate stainless-steel metal boxes, installed in accordance with manufacturer details, ensuring proper attachment, maintaining a minimum of 2" of clearance around the penetration.
- C. Pockets shall be filled with non-shrinking grout to within 1" of the top of the pocket. Allow the grout to dry and fill the remainder of the pocket with pourable sealant.
- D. Pitch pockets and the sealant will require periodic maintenance by the building Owner's maintenance personnel.

### 3.09 LOUVER INSTALLATION

- A. Remove existing window unit in its entirety including perimeter sealants to clean masonry substrates.
- B. Inspect areas to receive louvers. Notify the Architect of conditions that would adversely affect the installation or subsequent utilization of the louvers. Do not proceed with installation until unsatisfactory conditions are corrected.
- C. Coordinate with masonry and flashing work specified.
- D. Clean opening thoroughly prior to installation.
- E. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- F. Install louvers at locations indicated on the drawings and in accordance with manufacturer's instructions.
- G. Install louvers plumb, level, in plane of wall, and in alignment with adjacent work.
- H. Install perimeter sealants and backer materials.
- I. Clean louver surfaces in accordance with manufacturer's instructions. Touch-up, repair, or replace damaged products before Substantial Completion.
- J. Use concealed anchorages where possible. Provide stainless steel or aluminum washers fitted to screws where required to protect metal surfaces and to make a weathertight connection.
- K. Provide perimeter reveals and openings of uniform width for sealants and joint fillers, as indicated.
- L. Repair damaged finishes so no evidence remains of corrective work. Return items that cannot be refinished in the field to the factory, make required alterations, and refinish entire unit or provide new units.
- M. Protect galvanized and nonferrous-metal surfaces from corrosion or galvanic action by applying a heavy coating of bituminous paint on surfaces that will be in contact with concrete, masonry, or dissimilar metals.

### 3.10 CLEAN-UP

- A. Remove protective film (if any) from exposed surfaces of metal promptly upon installation. Strip with care to avoid damage to finishes.
- B. Upon completion of each area of soldering copper, carefully remove flux and other residue from surfaces. Neutralize acid flux by washing with baking soda

solution, and then flushing with clear water rinse. Use special care to neutralize and clean crevices.

- C. Clean exposed metal surfaces of substances that would interfere with uniform oxidation and weathering.
- D. All floor and adjacent areas, both interior and exterior, damaged, or stained by the installation of the roofing work shall be repaired and cleaned of all dust, debris, and any other materials to the Owner's satisfaction.
- E. The Contractor shall not demobilize the site until the Owner and Engineer tour the completed work. Any unsatisfactory items observed will be reported in "Punch List" form. These items shall be corrected immediately by the Contractor prior to demobilization from the job site. Final payment will not be made until all punch list items are complete and guarantees have been received.
- F. Remove all scaffolding, barriers, temporary facilities, and the like upon completion of the work. Restore areas damaged as a result of the Contractors equipment to their original condition to the satisfaction of the Owner.

**END OF SECTION**



## PART 1 - GENERAL

### 1.01 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 1 - GENERAL REQUIREMENTS, which are hereby made a part of this section of the specifications.

### 1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Divisions 0 and 1 of the Project Manual
- B. Section 02 41 00 - Selective Demolition
- C. Section 02 82 13 - Asbestos Containing Roofing Material Abatement
- D. Section 02 83 00 - Lead Paint Activity
- E. Section 02 84 33 - Removal and Disposal of PCBs
- F. Section 06 10 00 - Rough Carpentry
- G. Section 07 52 00 - Elastomeric Membrane Roofing
- H. Section 07 62 00 - Sheet Metal and Flashing

### 1.03 SUMMARY OF WORK

Perform all work, supply all material, and provide equipment necessary to complete the work of this section. Such work includes, but is not limited to, the following:

- A. Coordinate all work with Section Section 07 52 00 Elastomeric Roofing. Protect new and existing roofing during this scope of work.
- B. Provide and install new FM Approved, OSHA rated unit skylights at Roof Area A.
- C. Provide ballasted guard rail systems at locations indicated on Contract Documents.
- D. Provide lifts, hoists, manpower, and equipment necessary to complete the work.

### 1.04 JOB CONDITIONS

- A. Skylights shall be installed in accordance with their online FM Global Approval Guide listing to withstand the specified uplift rating for Roof Area A.
- B. Provide site specific work/safety plan for the Owner's review and files. Plans shall include, but not be limited to, fall arrest, handling of materials, lead work plans for removal of the existing metals, etc.
- C. The building and site will be occupied and in use during the time of construction. The Contractor shall take all precautions to create as little disruption as possible during the course of the work.
- D. Coordinate the work in this Section with the work of other trades to ensure the orderly progress of the work.

- E. The Contractor shall utilize skilled and experienced specialty workers to install the work. Experienced trade workers shall be utilized for all aspects of the work.

#### 1.05 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 basic designation only.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI H35 Aluminum and Aluminum Alloys

OCCUPATIONAL HEALTH AND SAFETY ASSOCIATION (OSHA)

#### 1.06 GENERAL REQUIREMENTS

- A. Fabrication and erection shall be performed by an organization experienced in work of equivalent magnitude.
- B. The Contractor shall be responsible for correctness of detailing, fabrication, and for the correct fitting of components.

#### 1.07 SUBMITTALS

The following shall be submitted in accordance with Section 01 31 00 Project Management and Coordination:

- A. Drawings:
  - 1. Skylight shop drawings at 3" = 1' minimum scale.
  - 2. Proposed railing layout showing dimensions and locations of bases.

#### 1.08 PRODUCT DELIVERY, STORAGE AND HANDLING

Material shall be stored out of contact with the ground in such manner and location as will minimize deterioration.

#### 1.09 WARRANTIES

- A. Provide written **five (5) year warranty** (from date of Substantial Completion) for skylight signed by the skylight manufacturer, agreeing to repair or replace work that exhibits defects in materials or workmanship and guaranteeing weathertight and leak-free performance. Warranty shall also guarantee against yellowing for the acrylic materials and cover repair or replacement of work that has or develops defects in the plastics.
  - 1. "Defects" is defined as uncontrolled leakage of water, peeling, chipping, chalking, fading, abnormal aging or deterioration, and failure to perform as required. Contact the manufacturer for list of available finishes.

- B. Provide manufacturer's **five (5) year warranty** (from date of Substantial Completion) agreeing that roof safety railings shall be free of defects in material and workmanship. Should a part fail to function in normal use within this period, manufacturer shall furnish a new part at no charge.
- C. Upon completion of the work, and prior to final payment, the Contractor shall submit a Guarantee of his work to be free from defect in materials and workmanship. This Guarantee shall be for a period of **three (3) years from the date of Substantial Completion**, shall be signed by a Principal of the Contractor's firm, and sealed if a corporation.

#### 1.10 DISSIMILAR MATERIALS

Where dissimilar metals are in contact, or where aluminum is in contact with concrete, mortar, masonry, wet or pressure-treated wood, or absorptive materials subject to wetting, the surfaces shall be protected with a coat of bituminous paint or asphalt varnish, or a neoprene gasket.

### PART 2 - PRODUCTS

#### 2.01 SKYLIGHT

- A. Skylights shall be FM-Approved, aluminum framed, polycarbonate double-domed, curb mounted units. Contractor to verify curb dimensions. Skylight domes shall resist a 2-inch diameter hail stone in accordance with FM Data Sheet 1-34. Skylight units shall provide integral fall protection or include fall protection screen that is OSHA rated. Acceptable manufacturers include:
  - 1. Tufflite Series by Bristolite Daylighting Systems, Santa Ana, CA.
  - 2. Industrial Series by Skyco Skylights, Costa Mesa, CA
  - 3. Dynamic Dome by Velux America, Greenwood, SC
- B. Skylights shall be tested by an independent testing laboratory to meet a minimum 40 pounds per square foot positive load and a 20 pounds per square foot negative load.
- C. Curb Frame: Extruded aluminum alloy 6063-T5 (min.) ASTM B 221 (ASTM B 221 M) with minimum effective thickness of .109 inches. Provide integral condensation gutter system with corners fully welded for waterproof quality. Curb frame to have poured and de-bridged polyurethane thermal break.
- D. Retainer Frame : Extruded aluminum alloy 6063-T5 (min). ASTM B 221 (ASTM B 221 M) with minimum effective thickness of 0.60 inches.
- E. Plastic Sheets: Monolithic, formable, transparent (colorless and tinted) sheets with good weather and impact resistant.
  - 1. Acrylic: ASTM D 4802, thermo-formable, and cold formable acrylic (methacrylate), Category C-2 or CC-2 Type UVA (formulated with

ultraviolet absorber), with Finish 1 (smooth or polished), unless otherwise indicated.

- F. Thermal Break: Fabricate skylight units with poured and de-bridged polyurethane thermal break separating interior metal framing from materials exposed to outside temperature.
- G. Shape and Size: As required to fit curb opening.
- H. Glazing: 100% cast acrylic (bronze). Outer dome thermoformed and or cold formed with 30% rise for TBV and TBVV. Submit available glazing colors to Owner for selection.
- I. Fasteners: Same metal as metals being fastened, or non-magnetic stainless steel or other non-corrosive metal as recommended by manufacturer.
- J. Bituminous Coating: SSPC-Paint 12, solvent-type, bituminous mastic, nominally free of sulfur and containing no asbestos fibers, compounded for 15-mil (0.4 mm) dry film thickness per coating.
- K. Curb: Minimum 3 1/2" wide field built for all units shipped knocked down.
- L. Condensation Control: Fabricate skylight units with integral internal gutters and weeps to collect and dispose of condensation beyond the outside of the support curb.
- M. Fall Protection: Provide 1 inch (6mm) square mesh consisting of 12 gage galvanized steel wire. Fasten mesh to the extruded aluminum retainer assembly.
- N. Aluminum Finishes: Comply with NAAMM "Metal Finishes Manual" recommendations for application and designations of finishes.
  - 1. Class I, Dark Bronze Color –Anodized Finish: AA-M12C22A42/A44 (Mechanical Finish: as fabricated, non-specular: Chemical Finish: etched, medium matte; Anodic Coating: Class I Architectural, film thicker than 0.7 mil (0.02mm) with integral color or electrolytically deposited color) complying with AAMA 606.1 or AAMA 608.1.

## 2.02 BALLASTED GUARD RAILS

- A. Provide a free-standing roof edge guard rail system at locations indicated on the Contract Drawings. Railing system shall be OSHA rated and capable of resisting a 200# force in any direction. Railings shall be galvanized, and powder coated.
- B. Base Plates should allow 45 and 90 degree turns, hold up to two intersecting rails, have narrow space between rail sections (4" maximum) and be powder coated.

- C. Rail Sections shall be 42 inches high and available in various lengths to suit project conditions. Rail sections shall be fully welded, Schedule 40 2" outside diameter pipe and powder coated.
- D. Rail Pins shall be provided to prevent displacement of the railing posts from the base.
- E. Powder coating color to be selected by the Owner.

### 2.03 FASTENERS AND ANCHORS

- A. Use methods for fastening or anchoring metal fabrications to building construction as shown or specified.
- B. Where fasteners and anchors are not shown, design the type, size, location and spacing to resist the loads imposed without deformation of the members or causing failure of the anchor or fastener, and suite the sequence of installation.
- C. Use material and finish of the fasteners compatible with the kinds of materials which are fastened together and their location in the finished work.

## PART 3 - EXECUTION

### 3.01 WORKMANSHIP

- A. Metal work shall be well formed to shape and size, with sharp lines and angles and true curves. Drilling and punching shall produce clean true lines and surfaces.
- B. Examination: Examine substrates and conditions, with installer present, for compliance with requirements for installation tolerances and other conditions affecting skylight performance. Proceed with installation only after unsatisfactory conditions have been corrected
- C. Installation shall be in accordance with manufacturer's installation instructions and approved drawings, cuts, and details.

### 3.02 SKYLIGHT INSTALLATION

- A. Metal Protection:
  - 1. Where aluminum will contact dissimilar metals, protect against galvanic action by painting contact surfaces with primer or by applying sealant or tape recommended by manufacturer for this purpose.
  - 2. Where aluminum will contact concrete or masonry, protect against corrosion by painting contact surfaces with bituminous paint.

3. Where aluminum will contact pressure-treated wood, separate dissimilar materials by methods recommended by manufacturer.
- B. Installation:
1. Comply with manufacturer's written instructions for protecting, handling, and installing skylight components.
  2. Follow the manufacturer's installation instructions and job specific drawings to ensure proper installation.
  3. Coordinate with installation of vapor barriers, roof insulation, roofing, and flashing as required to assure that each element of the work performs properly and that combined elements are waterproof and weather tight. Anchor units securely to supporting structural substrates, adequate to withstand lateral and thermal stresses as well as inward and outward loading pressures.
- C. Cleaning and Protection:
1. Clean exposed metal and plastic surfaces according to manufacturer's instructions. Touch up damaged metal coatings.
  2. Clean plastic skylight units, inside and out, not more than 5 days prior to date of substantial completion.

### 3.03 RAILING INSTALLATION

- A. Follow OSHA and Code requirements for railing extension beyond edge of roof top unit. Railings shall extend a minimum of 2'-6" beyond equipment.
- B. Align rectangular basis with direction of primary force and perpendicular to roof edge for maximum overturn resistance.

**END OF SECTION**

## PART 1- GENERAL

### 1.01 IN GENERAL

The General Conditions, and all parts of the Bid and Contract Documents are made part of this Section as if fully repeated herein.

### 1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Divisions 0 and 1 of the Project Manual
- B. Section 02 41 00 - Selective Demolition
- C. Section 03 30 00 - Cast-in-Place Concrete
- D. Section 04 50 00 - Masonry
- E. Section 05 50 00 - Miscellaneous Metals
- F. Section 50 00 00 - Project-Specific Available Information

### 1.03 SUMMARY OF WORK

This Section specifies requirements for the following Scope of Work:

- A. Provide aluminum flagpole(s) as shown on drawings and as specified herein, with components as needed for a complete installation.
- B. Provide pole-mounted, solar light fixtures in accordance with Section 26 05 02.

### 1.04 JOB CONDITIONS

- A. The building will be occupied during construction. The Contractor shall provide all protection, barriers, and guards necessary to segregate their work area, and the areas below, from building occupants.
- B. The Contractor is cautioned that electrical conduits, plumbing, and mechanical lines are in close proximity to the proposed foundation locations. The Contractor will be responsible for confirming utility locations to avoid conflicts during excavation and installation of foundation.
- C. The Contractor shall utilize skilled and experienced specialty workers to install the work. Experienced trade workers shall be utilized for all aspects of the work.

### 1.05 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

- A. AISC 326-02 Detailing for Steel Construction
- B. AISC 303-05 Code for Standard Practice for Steel Buildings and Bridges

- C. ASTM A36 Standard Specification for Carbon Structural Steel
- D. ASTM A307-10 Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength
- E. ASTM A563-07a Specification for Carbon and Alloy Steel Nuts
- F. ASTM F844-07a Specification for Washers, Steel, Plain (Flat), Unhardened for General Use
- G. AWS A2.4 Standard Symbols for Welding, Brazing, and Nondestructive Examination

AMERICAN WELDING SOCIETY (AWS)

- H. AWS D1.1 Structural Welding Code - Steel
- I. AWS D1.3 Structural Welding Code- Sheet Steel

1.06 SUBMITTALS

Shop Drawings and Submittals shall be made in accordance with the General Conditions and Section 01 31 00 Project Management and Coordination. In addition, the following shall be submitted:

- A. Product Data: For each type of flagpole and its accessories, submit manufacturer's technical data and standard installation instructions.
- B. Shop Drawings: Show general layout, applicable dimensions, jointing, anchorage, support systems, and accessories.
- C. Samples: Finish samples for each specified finished metal for Owner selection.
- D. Request Special Inspection for suitability of soils prior to installation of flag pole foundation.

1.07 DIMENSIONS AND QUANTITIES

- A. All dimensions and quantities shall be determined or verified by the Contractor. The Contract Drawings have been compiled from various sources and may not reflect the actual condition at the moment of construction. The Contractor is cautioned to take all precautions and make all investigations necessary to install the proposed work. The Owner will not consider unfamiliarity with the job conditions as a basis for additional compensation.



#### 1.08 QUALITY ASSURANCE

- A. Source: Obtain each flagpole as a complete unit from the manufacturer, including fittings, accessories, bases, and anchorage devices.
- B. Manufacturers: Minimum of 10 years' experience in the fabrication of commercial-grade flag poles.
- C. Installers: Minimum of five (5) years' experience installing flagpoles of similar height and complexity in locale of project.
- D. Special Inspections are required for cast-in-place shallow foundations, controlled structural fill, reinforcing, concrete placement, and curing. Coordinate with the Architect/Engineer, Owner, and/or CA to schedule inspection so as not to delay the work.

#### 1.09 WARRANTY

- A. Manufacturer's warranty: **five (5)** year fabrication warranty.
- B. Upon completion of the work, and prior to final payment, the Contractor shall submit a Guarantee of his work to be free from defect in materials and workmanship. This Guarantee shall be for a period of **three (3) years** and shall be signed by a Principal of the Contractor's firm and sealed if a corporation.

### PART 2 - MATERIALS

#### 2.01 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
  - 1. Concord American Flagpole  
4150 Kellway Circle  
Addison, TX 75001  
1.800.527.3902 (telephone)  
1.800.426.5770 (fax)  
<http://www.concordamericanflagpole.com>
  - 2. Morgan-Francis Flagpoles and Accessories  
3412 North Walnut Street  
Muncie, IN 47303  
1.800.814.9568 (telephone)  
<http://www.morgan-francis.com/>
  - 3. Eder Flag Manufacturing Company, Inc.  
1000 W. Rawson Avenue • P.O. Box 397

Oak Creek, WI 53154-0397  
1.800.558.6044 (telephone)  
<https://www.ederflag.com>

4. (Or an Approved Equal)

2.02 FLAG POLES

- A. Aluminum Flagpole Construction: Fabricate from seamless, extruded tubing complying with ASTM B221, alloy 6063-T6, having a tensile strength not less than 30,000 psi with a yield point of 25,000 psi. Heat treat after fabrication to comply with ASTM B 597, temper T6.
  - 1. Provide cone-tapered flagpoles, per manufacturer's standard rate of taper.
- B. Assembly Construction: Internal revolving with winch - wire halyard - ground set foundation.
- C. Foundation Tube: Galvanized corrugated steel foundation tube, 0.0635" = 16 Gauge (1.6 mm) minimum wall thickness, sized to suit flagpole and installation. Provide with 3/16" (4.8 mm) steel bottom plate and steel centering wedges. Furnish with 3/16" (4.8mm) support plate, 3/4" (19 mm) diameter x 18" long steel ground lightning spike. Foundation tube will consist of all welded construction.
- D. Finial (Ornament): Finial sized as indicated or, if not indicated, to match pole butt diameter.
- E. Internal Revolving Truck Assembly: Cast-aluminum heavy-duty revolving truck with sealed stainless-steel bearing assemblies, aluminum spindle, cast brass exit bushing, and removable hood.
- F. Internal Halyard Winch System: Provide one (1) complete internal halyard 1/8" stainless-steel wire cable assembly with plastic-coated, dual attachment point counterweight, and beaded sling assembly. A manually operated mechanical winch having automatic brake system and operated with a removable hand crank will be concealed inside the flagpole behind a flush access door having a cylinder lock.
- G. Halyard Flag Snaps: Provide a complete assembly flag arrangement with two (2) stainless-steel swivel flag snaps with neoprene covers.
- H. Flash Collar: Provide cast-aluminum collar to match flagpole.

2.03 FINISHES

- A. Finishes are to be selected by Owner.

- B. Metal Finishes, General: Comply with National Association of Architectural Manufacturers' (NAAMM) "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- C. Finish Specifications (Satin or Anodized): Aluminum finish designations prefixed by AA conform to the system established by the Aluminum Association for designating aluminum finishes.
  - 1. Natural Satin Finish: Provide directional-sanded satin finish (AA-M33); buff complying with AAM20.
  - 2. Anodized Finishes: Provide Class 1 finish complying with AA M32-C22-A41 (Clear Anodized) or AA M32-C22-A42 (Color Anodized Finishes) in thicknesses ranging from 1 to 3 mils.
    - a. Anodized - Clear (ACL)
    - b. Anodized - Dark Bronze (ADB)
    - c. Anodized - Black (ABL)

#### 2.04 FLAGS

- A. Flags shall be made in accordance with U.S. Code, Title 4.
- B. Size: 5 feet by 9.5 feet, Government specification (G-spec), USA Internment Flag
- C. Materials: Nylon high-tenacity, industrial-strength, 70 denier light weight nylon with lock-stitched seams, color matched thread, heavy canvas duck heading, and #2 rolled trim, solid brass, toothed grommets.
- D. Flags:
  - 1. (1) American Flag
  - 2. (1) State of Connecticut

### PART 3 - EXECUTION

#### 3.01 PREPARATION

- A. Prior to starting excavation, inform the Architect/Engineer, Owner, and/or CA, and request testing of existing soils. The State's Special Inspector to conduct and provide results of proctor compaction test.
- B. Excavation: For foundations, excavate to neat clean lines in undisturbed soil. Remove loose soil and foreign matter from excavation and moisten earth before placing concrete.
- C. Foundation: Provide forms where required due to unstable soil conditions and for perimeter of flagpole base at grade. Secure forms and galvanized-steel ground sleeve foundation tube in position, braced to prevent displacement during concreting.

- D. Refer to Section 03 30 00 Cast-In-Place Concrete for placing requirements.

3.02 FLAGPOLE INSTALLATION

- A. General: Install flagpoles where shown and according to shop drawings and manufacturer's written instructions.
- B. Foundation Tube Installation: Install flagpole in foundation tube, seated on bottom plate between steel centering wedges. Plumb flagpole and install hardwood wedges to secure flagpole in place. Place and compact sand in foundation tube to within 2" of the top of tube. Remove hardwood wedges and seal top of foundation tube with a 2" (50 mm) layer of elastomeric sealant or cement and cover with sealed flashing collar.

**END OF SECTION**

## PART 1- GENERAL

### 1.01 IN GENERAL

The General Conditions, and all parts of the Bid and Contract Documents are made part of this Section as if fully repeated herein.

### 1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Divisions 0 and 1 of the Project Manual
- B. Section 02 41 00 - Selective Demolition
- C. Section 02 82 13 - Asbestos Containing Roofing Material Abatement
- D. Section 03 01 00 - Concrete Restoration
- E. Section 05 50 00 - Miscellaneous Metals
- F. Section 06 10 00 - Rough Carpentry
- G. Section 07 52 00 - Elastomeric Membrane Roofing
- H. Section 07 62 00 - Sheet Metal and Flashing
- I. Section 50 00 00 - Project-Specific Available Information

### 1.03 SUMMARY OF WORK

This Section specifies requirements for the following Scope of Work:

- A. During roof replacement work, provide temporary sheet metal drain sleeves with flashing to the roof cover, in accordance with Section 07 62 00.
- B. Existing roof drain leader sizes are listed on the Contract Drawings.
- C. Existing drain bowls to remain at concrete deck areas. Clean existing drain bowls of debris, adhesives, etc. and clear the existing leaders to free-flow condition. Provide new cast iron roof drain collar extensions, support rings, sump pans, strainers, and associated hardware.
- D. Remove and replace damaged drain bowls at concrete deck areas (Unit Price Item).
- E. Remove and replace existing drain bowls and accessories at wood deck areas. Extend drain leaders to accommodate increased roof thickness. Provide new cast iron drain bowls, sump pans, and associated hardware.
- F. Test connections between each new drain bowl and drain leader extensions, and new leader-to-leader connections.
- G. Extend existing roof vent pipes relative to finished roof surface(s) as detailed.
- H. Replace, patch, seal, and repair all existing construction assemblies removed, damaged, or cut to allow for the installation of the new drain accessories.

- I. Provide Temporary Protection of the building interior during drain replacement and restoration procedures. Coordinate with Section 01 50 00.
- J. Refer to Section 07 62 00 Sheet Metal and Flashing for gutters, downspouts, and scuppers.

#### 1.04 JOB CONDITIONS

- A. **SPECIAL NOTE:** Portions of the existing flashings and roofing membrane have been tested and found to contain Asbestos Containing Materials (ACM). The Contractor shall comply with the National Emission Standard for Hazardous Air Pollutants (NESHAP) regulation published in the Federal Register under 40 CFR, Part 61, subpart M. Specific attention is directed to Appendix A of this regulation entitled, Interpretive Rule Governing Roof Removal Operations. In addition to these regulations, the Contractor shall comply with OSHA Regulation (29 CFR Parts 1910 et al – Occupational Exposure to Asbestos; Final Rule) and all other State and Local guidelines regarding asbestos containing material removal and disposal. For clarification, refer to Section 02 82 13 Asbestos Containing Material Removal.
- B. **Lead Paint and Flashings:** Lead containing materials were identified at the Work Site. Reference Inspection Report in Section 50 30 00 Hazardous Building Materials Inspection and Inventory. The Contractor shall be responsible for compliance with OSHA lead in construction (29 CFR 1926.62 "Lead Exposure in Construction: Interim Final Rule") and RCRA (USEPA and CT DPH and DEEP) disposal requirements for completion of the demolition and roof replacement work. Lead containing materials shall be managed and disposed by the Contractor in strict accordance to applicable Local, State, and Federal laws.
- C. **Polychlorinated Biphenyls:** Testing for polychlorinated biphenyls (PCBs) is not required on this project. The existing glazing and sealants at the clerestory skylight units at Roof Area C are to be removed by the contractor and disposed of as PCB waste.
- D. Coordinate the work in this Section with the work by other trades to ensure a watertight condition and the orderly progress of the Work.
- E. Notify the Owner at least 72 hours in advance of doing any demolition work so that the Owner may coordinate with occupants and/or provide entry into required areas.
- F. The Contractor is required to remove and replace drain components as part of the new roof system. Existing drain bowls are to be cleaned, re-secured, and reused in the new work, where indicated.
- G. Sections of the existing building finishes will require removal in order to properly install the new work. These areas should be reviewed with the A/E, Owner, and/or CA prior to removal. Work areas shall be clearly defined and closed off from building occupants. Areas of finish removal shall be as small as possible to effectively install the work. Any finishes damaged, including pipe insulation shall be repaired or replaced by the Contractor at no cost to the Owner.

- H. The Contractor is cautioned to take all necessary precautions and make investigations necessary to install the Work. Owner will not consider unfamiliarity with the job conditions as a basis for additional compensation.
- I. The Contractor is responsible to verify the size and type of roof drain components for the existing building.
- J. The plumbing work shall be coordinated with the roof work in such a manner that no interior portions of the building are left exposed to the elements at the end of a day's work. All drains should be in working order at the end of each work day.

#### 1.05 REFERENCES

- A. ASTM A 74 Cast Iron Soil Pipe and Fittings
- B. ASTM C 564 Rubber Gaskets for Cast Iron Soil Pipe and Fittings
- C. ASTM A 888 Standard Specification for Hub-less Cast-Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications
- D. ASTM C 1277 Standard Specification for Shielded Couplings Joining Hub-less Cast-Iron Soil Pipe and Fittings
- E. CISPI Standard 301 Standard Specification for Hub-less Cast-Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications
- F. CISPI Standard 310 Specification for Coupling for Use in Connection with Hub-less Cast-Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications

#### 1.06 SUBMITTALS

- A. Manufacturer's literature shall be submitted on all items specified in Part 2 of this section and in conformance with the Supplemental General Conditions.

#### 1.07 QUALITY ASSURANCE

- A. The plumbing shall be performed by licensed tradesmen.

#### 1.08 DIMENSIONS AND QUANTITIES

- A. All dimensions and quantities shall be determined or verified by the Contractor. The Contract Drawings have been compiled from various sources and may not reflect the actual condition at the time of construction. The Contractor is advised to take all precautions and make all investigations necessary to install the proposed work. The Owner will not consider unfamiliarity with the job conditions as a basis for additional compensation.

### 1.09 UNIT PRICE WORK

- A. The Unit Prices are above and beyond those shown on the Contract Drawings and shall be carried by the Contractor within the Base Bid Scope of Work. Unit prices for certain work of this Section are listed in Section 01 20 00 – Contract Considerations, 1.4 Unit Prices that precedes the technical specifications. The Contractor and Engineer shall verify the actual quantities used.
- B. Base Bid shall include all labor, access, materials, and accessories required for the proper restoration of existing drains set in concrete deck areas. The current quantity of damaged drain bowls is unknown. The base bid shall include **two (2)** new, adjustable roof drains.

### 1.10 WARRANTY

- A. Manufacturer's standard warranty: Materials shall be free of defects in material and workmanship for a period of **five (5) years** from the date of purchase. Should a part fail to function in normal use within this period, manufacturer shall furnish a new part at no charge.
- B. Upon completion of the work, and prior to final payment, the Contractor shall submit a Guarantee of his work to be free from defect in materials and workmanship. This Guarantee shall be for a period of three (3) years from the date of substantial completion and shall be signed by a Principal of the Contractor's firm, and sealed if a corporation.

## PART 2 - MATERIALS

### 2.01 REPLACEMENT ROOF DRAINS

- A. Roof drains shall be 9-1/2" and 12"-15" diameter minimum cast iron with adjustable extension sleeve, 4" minimum diameter bottom outlet, or sized to match existing leader piping, large sump, and wide roof flange, as manufactured by the following:
  - 1. Jay R. Smith MFG. Co., Zurn Industries LLC
  - 2. Josam Manufacturing Co.
  - 3. Tyler Pipe/Wade Division.

Drain assemblies shall have non-puncturing cast iron clamping ring with integral gravel stop. Drain strainers shall be coated cast iron of suitable size and configuration as provided by the drain manufacturer. Contractor to review the existing drain bowls and provide new drain bowls that match the existing size at each location.

- B. No-hub connections shall be a shielded hub less coupling which consists of a neoprene rubber sleeve and stainless-steel shield and band clamps. Joints shall be made with an elastomeric compression gasket meeting the requirements of ASTM C1277.



- C. All accessories necessary for the proper installation of the new drain bowl assemblies, including but not limited to under deck clamps, clamping rings with integral gravel stops and strainers, shall be of the same manufacturer as the drain bowls and be completely compatible with the existing piping and surrounding materials. Drain sump caulking shall be as recommended by the supplier and as approved by the roof membrane manufacturer.
- D. Based on the Contractor's field verification, if needed, drain bowl to leader pipe connections shall be pig lead and asbestos free oakum.

#### 2.02 ROOF DRAIN RESTORATION AND ACCESSORIES

- A. All accessories necessary for the proper installation of the new drain bowl assemblies, including but not limited to extension collars, support rings, strainers, and clamping rings with integral gravel stops, shall be coated cast iron of the same manufacturer as the drain bowls and be completely compatible with the existing piping and surrounding materials.
- B. Adjustable extension sleeves and collars shall be sized to accommodate increased insulation heights.
- C. All replacement hardware shall be stainless steel hardware.
- D. Acceptable manufacturers for drain accessories are: Josam Company, Zurn Products, Jay R. Smith Manufacturing Company, or approved equal compatible with existing drain bowls.

#### 2.03 INSULATION

- A. Insulation for new drain bowl assemblies and drain leader pipe shall be preformed and skinned fibrous glass, minimum 1" thick, of sufficient size to fit fixtures and piping. Insulation for new leader pipe elbows shall be preformed with factory-applied PVC jackets, minimum 1" thick, of sufficient size to fit fixtures and piping. Fittings shall be mitered of the same material. Joints shall be taped as recommended and supplied by the manufacturer of the insulation.

#### 2.04 ROOF DECK PATCHING

- A. Patching compound for repairing concrete deck around existing drain bowls shall be in accordance with Section 03 01 00, Concrete Restoration, respectively.

#### 2.05 CEILING SYSTEM MATERIALS

- A. Coordinate the removal and re-installation of the existing tiles/finishes to perform the plumbing work. Provide new finishes to match existing as required if existing components are damaged during removal.

## 2.06 VENT PIPE EXTENSIONS

- A. Provide cast iron pipe extensions matching the diameter to the existing vent pipes. Sizes are listed on the Contract Drawings. Contractor to verify in the field prior to the work.
- B. No-hub connections shall be a shielded hub less coupling which consists of a neoprene rubber sleeve and stainless-steel shield and band clamps. Joints shall be made with an elastomeric compression gasket meeting the requirements of ASTM C1277.
- C. Vent pipe extensions shall be sized to achieve 18" minimum and 24" maximum extension above the roof surface.

## PART 3 - EXECUTION

### 3.01 GENERAL

- A. All work in this Section shall be coordinated with roof replacement work. All required work at drain locations on completed or existing membranes shall be properly protected at all times from equipment and traffic.
- B. The Owner shall be notified at least two days (72-hours) prior to any under-deck work. All materials, temporary protection, equipment, and daily clean-up shall be the responsibility of the Contractor.
- C. All flashing-in of the roof drains and membrane repairs as a result of the plumbing work shall be the responsibility of the Roofing Contractor.
- D. The Contractor is cautioned to investigate all existing conditions and materials of construction. All replacement items, including but not limited to drain bowls, clamps, hangers, supports, strainers, and caulking, must be completely compatible with the existing plumbing and new roofing system, while fitting within the existing building structure.
- E. Clean all drain assemblies thoroughly of dust, dirt, debris, and bituminous materials prior to the installation of the new membrane system.

### 3.02 ROOF DRAIN RESTORATION – CONCRETE AREAS

- A. Existing drain bowls to remain in place at concrete deck areas.
- B. Remove and discard existing drain strainers, membrane clamping rings, and associated hardware.
- C. During re-roofing operations, provide and install temporary drain inserts and flashing between the inserts and the roof membrane.

- D. Roof drainage system to remain functional for the duration of the project.
- E. Provide and install new support rings, extension sleeves, collars, and accessories as needed to accommodate increased insulation.
- F. Coordinate new drain elevation(s) with tapered insulation drain sumps.

3.03 REMOVAL OF EXISTING DRAINS – WOOD DECK AREAS

- A. Remove the existing drain bowls from the roof deck so as to cause minimum damage to the deck.
- B. Remove and replace deteriorated roof deck in accordance with Section 06 10 00 Rough Carpentry.
- C. The Contractor shall provide and maintain all interior and roof deck protection.

3.04 INSTALLATION OF DRAIN ASSEMBLIES – WOOD DECK AREAS

- A. Install new drains such that the bowl flanges with clamping ring and integral gravel guard are located at the bottom of drain sump in the finished roof assembly.
- B. Provide and install new support rings, extension sleeves, collars, and accessories as needed to accommodate increased insulation.
- C. Coordinate new drain elevation(s) with tapered insulation drain sumps.
- D. Make all drain to leader connections watertight and of sufficient strength.
  - 1. Lead and oakum joints: Pack joint tightly with oakum of sufficient size to remain firmly in place. Pour hot pig lead into the joint and allow to cool. Tamp tight after cooling.
  - 2. No-hub connections: Install no-hub fittings to drain bowls as required. Clean existing leader pipe as required for a leak free connection. Install no-hub connection and tighten securely.
- E. Install new clamping rings using the required hardware. Set strainer on clamping ring and lock in place.
- F. Drains installed shall be completed and flashed in the same day's operation.
- G. Check all roof drain and leader pipe joints with a water test once roofing and flashing are complete and prior to installing drain system insulation to check for leaks.

### 3.05 DRAIN LEADER EXTENSION INSTALLATION

- A. Installation shall comply with the latest installation instructions published by the pipe manufacturer and shall conform to all applicable plumbing, fire, and building code requirements.
  - 1. Lead and oakum joints: Pack joint tightly with oakum of sufficient size to remain firmly in place. Pour hot pig lead into the joint and allow to cool. Tamp tight after cooling.
  - 2. No-hub connections: Install no-hub fittings to drain bowls as required.
- B. Employ *licensed plumbing contractors*. Follow good plumbing practices and observe all safety precautions.
- C. Support terminal ends of all horizontal runs or branches and each change of direction or alignment with an approved hanger.
- D. Vertical components shall be secured at each stack base and at sufficiently close intervals to keep the system in alignment and to adequately support the pipe and its contents.
- E. Clean existing leader pipe as required for a leak free connection. Install no-hub connection and tighten securely.

### 3.06 CLEANING OF DRAINAGE SYSTEM

- A. Once the new replacement roof system has been installed, clear all roof drain leader piping of debris and clogs such that the system is free-flowing.
- B. The Contractor shall clear the existing leader pipe with Roto-rooter type equipment.
- C. Provide the Owner 48 hours minimum advance notice of drainage system cleaning.
- D. Provide water testing for each replacement and augmenting drain to exhibit proper function and water tightness.

### 3.07 TESTING AND INSPECTION OF DRAINAGE SYSTEM(S)

- A. Once the drain leader piping has been cleared and determined to be free-flowing, coordinate inspection by the Connecticut Office of the State Building Inspector in accordance with Chapter 1, Section 107 of the International Plumbing Code (IPC), including:
  - 1. Rough-in inspection shall be made after the roof, framing, fire blocking, draft stopping, and bracing is in place and after all sanitary, storm, and water distribution piping is roughed-in, and prior to the installation of wall or ceiling membranes.
  - 2. Final inspection shall be made after the building is complete, all plumbing fixtures are in place and properly connected, and the structure is ready for occupancy.

3. Other inspections: in addition to the inspections specified above, the code official is authorized to make or require other inspections of any construction work to ascertain compliance with the provisions of the IPC and other laws that are enforced.
  4. It shall be the duty of the holder of the permit to notify the code official when work is ready for inspection. It shall be the duty of the permit holder to provide access to and means for inspections of such work that are required by code.
  5. The code official is authorized to accept reports of approved inspection agencies, provided that such agencies satisfy the requirements as to qualifications and reliability.
- B. Plumbing work and systems shall be tested as required by the IPC:
1. New, altered, extended, or repaired systems shall be tested to disclose leaks and defects and to determine compliance with the provisions of the IPC.
  2. Where any work or installation does not pass any initial test or inspection, the necessary corrections shall be made to comply with this code. The work or installation shall then be resubmitted to the code official for inspection and testing.
  3. The permit holder shall give reasonable advance notice to the code official when the plumbing work is ready for tests. The equipment, material, power, and labor necessary for the inspection and test shall be furnished by the permit holder and the permit holder shall be responsible for determining that the work will withstand the required test pressures.
  4. A water test shall be applied to the drainage system either in its entirety or in sections. If applied to the entire system, all openings in the piping shall be tightly closed, except the highest opening, and the systems shall be filled with water to the point of overflow. If the system is tested in sections, each opening shall be tightly plugged except the highest openings of the section under test, and each section shall be filled with water, but no section shall be tested with less than a 10-foot head of water.

**END OF SECTION**

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## PART 1 – GENERAL

1.01 The General Conditions, and all parts of the Bid and Contract Documents are made part of this Section as if fully repeated herein.

### 1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Divisions 0 and 1 of the Project Manual
- B. Section 02 41 00 - Selective Demolition
- C. Section 06 10 00 - Rough Carpentry
- D. Section 07 52 00 - Elastomeric Membrane Roofing
- E. Section 07 62 00 - Sheet Metal and Flashing
- F. Section 26 05 02 - Electrical

### 1.03 SCOPE OF WORK

- A. Provide all temporary protection, lifts, manpower, and equipment to protect the building and its components.
- B. Disconnect and reconnect roof top equipment including exhaust and intake hoods, ductwork, and condensing units, to prevent delays in the roofing schedule. Coordinate hoisting requirements and provide the materials in accordance with the schedule.
- C. Prior to disconnection of roof top condensing units, evacuate refrigerant, cut and cap refrigerant piping and temporarily remove roof top condensing unit.
- D. Provide temporary roof support stand for refrigerant piping during removal of existing roof top condensing unit.
- E. Remove and dispose of existing equipment, curbs, and steel dunnage, where indicated.
- F. Provide new sleeper curbs for existing condensing units to remain, where indicated.
- G. Disconnect, modify, relocate, and reconnect chilled water piping at Roof Area B to increase clearance above finished roof. Provide new pipe insulation and jacketing at new sections and tie-in to the existing. For new heat trace, refer to Section 26 05 02.
- H. Review existing gas line and report purging and testing in coordination with the utility service provider and NFPA 54.
- I. Purge-out-of-service, disconnect, and remove rooftop gas lines at Area A. Purge-out-of-service and cap existing interior gas lines to be abandoned in place.

- J. Secure rooftop units to curbs and supports to resist 95 mph wind speeds.
- K. Coordinate the work in this section with the appropriate trades to insure the proper work sequence.
- L. Follow the FM Global Red Tag Permit System for any shut-down of the existing fire protection system(s). Refer to Section 05 70 00, FM Global publication "Red Tag System."

#### 1.01 SUBMITTALS

- A. General: submit the following in accordance with conditions of contract and Division 1 specification sections.
- B. Contractor to submit schedule indicating proposed sequence for selective demolition work to A/E, Owner, and/or CA for review prior to start of work. Include coordination for shutoff, capping, and continuation of utility services as required, together with details for dust and noise control protection.
- C. Photographs of existing conditions of structure surfaces, equipment, and adjacent improvements that might be misconstrued as damage related to removal operations. File with A/E, Owner, and/or CA prior to start of work.
- D. Storage or sale of unregulated removed items on site will not be permitted.
- E. Damages: promptly repair damages caused to adjacent facilities by demolition work.
- F. Provide temporary ventilation equipment to control spread of fumes and smoke and to maintain a healthy work environment.
- G. Utility services: existing utilities to remain in service and be protected against damage during demolition operations.

#### 1.04 INTENT

- A. It is the intent of the Specifications and Drawings to call for finished work, tested and ready for operation.
- B. Furnish, deliver, and install any apparatus, appliance, material, or Work not shown on Drawings but mentioned in the 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, under their respective Section without additional expense to the Owner.



- C. Include in the work minor details not usually shown or specified but necessary for proper installation and operation, as though they were hereinafter shown or specified.
- D. All materials furnished, and all work installed shall comply with the rules and recommendations of the NFPA, the requirements of the local utility companies, the recommendations of the fire insurance rating organization having jurisdiction, and the requirements of all Governmental departments having jurisdiction.

#### 1.05 DRAWINGS

- A. Where variances occur between the Drawings and Specifications or within either of the Documents, include the item or arrangement of better quality, greater quantity, or higher cost in the Contract price. The Engineer shall decide on the item and the manner, which the work shall be installed.

#### 1.06 SURVEYS AND MEASUREMENTS

- A. Pre-survey documentation of unit function, any deficiencies, and refrigerant levels.

#### 1.07 COORDINATION

- A. Prior to the start of work on existing gas lines, review the existing conditions with the utility service provider and report to A/E, Owner, and/or CA the purging and testing requirements.

Service Provider: Connecticut Natural Gas (CNG)

Mailing Address: P.O. Box 9245, Chelsea, MA 02150-9245

CNG Customer Care Center: 860-524.8361

- B. Carry out all work in conjunction with other trades and give full cooperation in order that all work may proceed with a minimum of delay and interference. Particular emphasis is placed on timely installation of major apparatus and furnishing other Contractors, especially the General Contractor or Construction Manager, with information as to openings, chases, sleeves, bases, inserts, equipment locations, panels, access doors, etc. required by other trades, and to allow for serviceable access to equipment.
- C. Where the Work of the Contractor will be installed in close proximity to or will interfere with Work of other trades, assist in working out space conditions to make a satisfactory adjustment.

- D. If Work is installed before coordinating with other Divisions or so as to cause interference with Work of other Sections, the Contractor causing the interference will make necessary changes to correct the condition without extra charge to the Owner.
- E. Initial contact and coordination has been conducted with utility entities for the purpose of the preparation of Bid Documents. The Contractor shall coordinate all final specific utility requirements.

1.08 MATERIALS AND WORKMANSHIP

- A. All materials and apparatus required for the work, except as otherwise specifically indicated, shall be new, of first-class quality, and shall be furnished, delivered, erected, connected, and finished in every detail and be so selected and arranged as to fit properly into the building spaces. Where no specific type or quality of material is given, a first-class standard article as accepted by industry standards shall be furnished.
- B. The Contractor shall furnish the services of an experienced superintendent who shall be constantly in charge of the installation of the work together with all skilled workmen, fitters, metal workers, welders, helpers, and laborers required to unload, transfer, erect, connect, adjust, start, operate, and test each system.
- C. Unless otherwise specifically indicated on the Drawings or Specifications, all equipment and materials shall be installed with the acceptance of the Engineer and in accordance with the recommendations of the manufacturer. This includes the performance of such tests as the manufacturer recommends.
- D. All labor for installation of mechanical systems shall be performed by experienced, skilled tradesmen under the supervision of a licensed journeyman foreman. All work shall be of a quality consistent with good trade practice and shall be installed in a neat, workmanlike manner. The Engineer reserves the right to reject any work which, in his opinion, has been installed in a substandard, dangerous, or unserviceable manner. The Contractor shall replace said work in a satisfactory manner at no extra cost to the Owner.

1.09 PROTECTION OF MATERIALS AND EQUIPMENT

- A. Work under each Section shall include protecting the work and material of all other Sections from damage by work or workmen and shall include making good all damage thus caused.
- B. The Contractor shall be responsible for work and equipment until the facility has been accepted by the A/E, Owner, and/or CA. Protect work against theft, injury, or damage and carefully store material and equipment received on site, which is not

immediately installed. Close open ends of work with temporary covers or plugs during construction to prevent entry of foreign material.

- C. Work under each Section includes receiving, unloading, uncrating, storing, protecting, setting in place, and completely connecting equipment supplied under each Section. Work under each Section shall also include exercising special care in handling and protecting equipment and fixtures, and shall include the cost of replacing any of the equipment and fixtures, which are missing or damaged.

#### 1.10 CUTTING AND PATCHING

- A. All cutting and patching shall be done per Division 1 requirements. The Contractor shall furnish sketches showing the location and sizes of all openings, chases, etc., required for the installation of work.

#### 1.11 SCAFFOLDING, RIGGING, HOISTING

- A. The Contractor shall furnish all scaffolding, rigging, hoisting, and services necessary for erection and delivery into the premises and equipment and apparatus furnished under this Division. Remove same from premises when no longer required.

#### 1.12 SHUTDOWNS

- A. When installation of a new system requires the temporary shutdown of an existing operating system, the connection of the new system shall be performed at such time as designated by the A/E, Owner, and/or CA.
- B. The A/E, Owner, and/or CA shall be notified of the estimated duration of the shutdown period at least ten (10) days in advance of the date the work is to be performed.
- C. Work shall be arranged for continuous performance whenever possible. The Contractor shall provide all necessary labor, including overtime if required, to assure that existing operating services will be shut down only during the time actually required to make necessary connections.

#### 1.13 ELECTRICAL CONNECTIONS

- A. Unless otherwise specified, all wiring shall be furnished and installed per Division 26 Specifications.
- B. All motor controllers not factory mounted on mechanical equipment shall be furnished, mounted, and installed by the Division 26 Contractor, and shall be coordinated with this contractor.

- C. All power wiring shall be furnished and installed per Division 26 complete from power source to motor or equipment junction box including power wiring through the motor controller and proper means of disconnect per NEC and Division 26. The Division 26 Contractor shall provide all disconnects, unless noted otherwise.

#### 1.14 CLEANING

- A. The Contractor shall be responsible for keeping the jobsite clean, safe, and neat throughout the duration of construction. The Contractor shall clean up his own debris daily and shall coordinate removal of rubbish and debris with the General Contractor/Construction Manager.
- B. No debris, construction materials, cigarette butts, coffee cups, etc., shall be left above suspended ceilings.
- C. Terminal equipment and plumbing fixtures shall clean at Substantial Completion.
- D. If any part of a system should be stopped or damaged by any foreign matter after being placed in operation, the system shall be disconnected, cleaned, and reconnected wherever necessary to locate and/or remove obstructions. Any work damaged in the course of removing obstructions shall be repaired or replaced when the system is reconnected at no additional cost to the Owner.
- E. During the course of construction, all ducts and pipes shall be capped in an acceptable manner to insure adequate protection against the entrance of foreign matter.
- F. Upon completion of all work under the Contract, the Contractor shall remove from the premises all rubbish, debris, and excess materials left over from their work. Any oil or grease stains on floor areas caused by the Contractor shall be removed and floor areas left clean.

#### 1.15 ADJUSTING AND TESTING

- A. After all the equipment and accessories to be furnished are in place, they shall be put in final adjustment and subjected to such operating tests so as to assure the Engineer that they are in proper adjustment, the control operates as described in the sequence of operation and all systems are in satisfactory, permanent operating condition.
- B. Where requested by the Engineer, a factory-trained service engineering representative shall inspect the installation and assist in the initial startup and adjustment to the equipment. The period of these services shall be for such time as necessary to secure proper installation and adjustments. After the equipment is

placed in permanent operation, the service engineering representative shall supervise the initial operation of the equipment and instruct the personnel responsible for operation and maintenance of the equipment. The service engineering representative shall notify the Contractor in writing that the equipment was installed according to manufacturer's recommendations and is operating as intended by the manufacturer.

#### 1.16 WARRANTY

- A. The Contractor shall guarantee all equipment, material, and workmanship under these Specifications and the Contract for a period of **three (3) years** from the date of final acceptance by A/E, Owner, and/or CA, unless otherwise noted.
- B. During this guarantee period, all defects developing through faulty equipment, materials or workmanship shall be corrected or replaced immediately by the Contractor without expense to the Owner. Such repairs or replacements shall be made to the Engineer's satisfaction.

### PART 2 PRODUCTS

#### 2.01 FASTENERS AND ACCESSORIES

- A. In general, fasteners shall be stainless steel. All accessories, including, but not limited to nails, screws, clips, fastening strips, etc. shall be completely compatible with the material being fastened to prevent galvanic reaction and premature deterioration.
- B. Fasteners for securing fan and vent unit covers and termination bars to existing wood construction shall be stainless steel hex head self-drilling screws. At fan, vent and AC unit cover re-securement use stainless steel capped EPDM washers of the next larger size than the existing fastener, but not less than a #12. Fasten at 12" centers, no less than two (2) fasteners per side.

#### 2.02 BASES AND SUPPORTS

- A. Unless otherwise specifically noted, the Contractor shall furnish all necessary supports, rails, framing, bases, and piers required for all equipment furnished under this Division.
- B. Unless otherwise shown, all equipment shall be securely attached to the building structure in an acceptable manner. Attachments shall be of a strong and durable nature; any attachments that are insufficient, in the opinion of the Engineer, shall be replaced as directed without extra cost to the Owner.

- C. All equipment supports shall be designed and constructed such that the equipment will be capable of resisting both vertical and horizontal movement. The equipment shall be positively anchored to the bases or supports to resist vertical movement. The equipment and its supports shall be provided with suitable restraints to resist horizontal movement from any direction as dictated by applicable seismic Codes.

### 2.03 SLEEVES, INSERTS, AND ANCHOR BOLTS

- A. The Contractor shall provide, set in place, and be held responsible for the location of all sleeves, inserts, and anchor bolts required for the work. In the event that failure to do so requires cutting and patching of finished work, it shall be done at the Contractor's expense.
- B. It is the responsibility of the Contractor to furnish cast-in-place steel sleeves, inserts, and anchors in sufficient time to be installed during initial concrete pours. Where job schedules make this impossible, coordinate and obtain acceptance from the Structural Engineer for alternate installation methods.
- C. All pipes and conduits passing through floors, walls or partitions shall be provided with sleeves having an inside diameter 1" larger than the outside diameter of the pipe, conduit, or insulation enclosing the pipe.
- D. Piping insulation shall run continuous through sleeve.
- E. Penetrations through fire-rated walls, ceilings, and all floors (except slab-on-grade) in which piping, or ducts pass shall be filled solidly with acceptable fire-stopping material. Sleeves shall be steel, or a UL / FM listed and approved assembly.
- F. When ducts, piping, or conduit penetrate the floor of a mechanical room located above an occupied space, such penetrations shall be made completely watertight, such that a liquid leak shall not pass through the penetration.

### 2.04 FIRE STOPS AND SEALS

- A. Penetrations through fire-rated walls, ceiling, or floors shall be sealed with a UL approved fire-stop fitting classified for an hourly rating equivalent to the fire rating of the wall, ceiling, or floor.

### 2.05 CHILLED WATER PIPING

- A. Replacement chilled water piping shall be schedule 40 black iron piping to match existing diameter for connections to existing sections, compliant with ASTM C585

- B. Pipe insulation shall be 2" thick with ASTM C547 fiberglass core with ASTM C1136 factory-applied polypropylene-coated vapor retarder jacket.
- C. For all outdoor piping, provide smooth-surface, 3003 or 3105-alloy aluminum jacketing with moisture barrier laminated to the interior surface, compliant with ASTM C1729 Aluminum Jacketing Material Standard and ASTM B209 Aluminum Alloy Standard.
- D. Refer to Section 26 05 02 for heat trace requirements.

#### 2.06 EXHAUST FAN BACKDRAFT DAMPER

- A. New damper shall be parallel blade, light-gauge aluminum, and sized to the inlet duct connection and flow rating of the existing rooftop exhaust fan.
- B. Coordinate with Section 26 05 02 Electrical for new disconnect switch.

### PART 3 – EXECUTION

#### 3.01 GENERAL

- A. Provide all materials, labor, equipment, and accessories required to furnish and install the mechanical items identified in this section.
- B. This section includes basic mechanical materials and methods to complement other sections in this specification and requirements indicated on the mechanical drawings.

#### 3.02 DEMOLITION

- A. General: perform selective demolition work in a systematic manner. Use such methods as required to complete work in accordance with demolition schedule and governing regulations.
- B. Provide all dumpsters and containers necessary to hold, store and transport demolished materials as required.
- C. Provide services for effective air and water pollution controls as required by local authorities having jurisdiction.
- D. If unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure both nature and extent of the conflict. Submit report to A/E, Owner, and/or CA in written,

accurate detail. Pending receipt of directive from A/E, Owner, and/or CA, rearrange selective demolition schedule as necessary to continue overall job progress without undue delay.

- E. Remove from building site debris, rubbish, and other material resulting from demolition operations. Transport and legally dispose off site.
- F. If hazardous materials are encountered during demolition operations, comply with applicable regulations, laws, and ordinances concerning removal, handling, and protection against exposure or environmental pollution.
- G. Burning of removed materials is not permitted on project site.

### 3.03 CUTTING, PATCHING AND DRILLING

- A. All cutting and patching of the building construction required for this work shall be by this contractor and confirmed as to size and location prior to construction.
- B. Neatly saw cut all rectangular openings, set sleeve through opening, and finish patch or provide trim flange around opening.
- C. Neatly saw cut and patch to match existing, including covering.
- D. Do not cut any structural components without architect's written approval, including, but not limited to roof joists, columns, floor joists, beams, girders, structural floor slabs, etc.
- E. Patch and finish to match adjacent areas that have been cut, damaged or modified as a result of the installation of the mechanical systems.
- F. All contractors shall confirm with A/E, Owner, and/or CA, prior to bid, times available for noise producing work such as cutting and core drilling of floors, walls, etc., as well as times for work which requires access into adjoining tenant spaces.
- G. The mechanical contractor shall coordinate with the general contractor prior to construction. The mechanical contractor shall provide information regarding openings in walls, floors, etc., and equipment supports to the general contractor. If the mechanical contractor fails to comply with this request, or if incorrect information is given, the necessary cutting and patching will be performed by the general contractor, at the mechanical contractor's expense.



3.04 DISCONNECT AND RECONNECT OF ROOFTOP EQUIPMENT

- A. Where the existing exhaust fans and mechanical equipment located on the roof must be disconnected, removed and reconnected:
- B. Prior to temporarily lifting of any existing exhaust fans and mechanical equipment, the contractor shall test the exhaust fans and mechanical equipment to ensure they are functioning properly and report any problems to the general contractor, A/E, Owner, and/or CA.
- C. The contractor shall coordinate all interruptions of power to existing exhaust fans and mechanical equipment with the A/E, Owner, and/or CA prior to any work. Note, the Owner does not have the technical support to perform renovations at the site, and therefore, all renovations, including the interruption and reconnecting of the power, will be borne by the Contractor.
- D. Rooftop unit installation shall be coordinated to prevent exposing the interior to inclement weather.
- E. The contractor shall ensure that the power to existing exhaust fans and mechanical equipment is turned off. The General contractor shall use lockout / tag-out procedures to ensure that the power is not turned on.
- F. The contractor shall temporarily disconnect, remove, and support the existing roof-mounted exhaust fans, mechanical equipment, ductwork, utilities, and wiring and reconnect the same, as required by job condition, after installation of a new roof and flashing of the roof curbs.
- G. The contractor shall coordinate the heights of the existing mechanical unit curbs and fan curbs with that of the tapered insulation height to confirm which of the units will require raising and new duct, utility and electrical extensions as required.
- H. The contractor shall replace existing exhaust fans and mechanical equipment disconnecting means that are in poor condition and rewire equipment as required by job conditions.
- I. The contractor shall turn power back on to the exhaust fans and mechanical equipment after work has been completed by all other trades on a daily basis.
- J. After the existing exhaust fans and mechanical equipment have been reconnected, the contractor shall test the exhaust fans and mechanical equipment to ensure they are functioning properly and report any problems to the A/E, Owner, and/or CA.

3.05 PURGING OF GAS LINES

- A. It is the intent of this specification to purge and remove existing, exterior gas lines on Roof Area A and to cap the existing, interior gas line just inside the roof penetration and at the gas main to abandon the piping in place.
- B. Contact the service provider to ensure gas service is shut off and to coordinate purging activities and testing requirements.
- C. Abandoning the existing, interior gas line in place requires testing for leaks during or following the purging process.
- D. Purge existing lines in accordance with NFPA 54 National Fuel Gas Code and test for leaks using 3 psig minimum.
- E. After completion of testing and after gas service has been introduced, the new fittings shall be tested with soap solution. Where leakage or other defects are noted, the affected portion of the piping system shall be repaired or replaced and retested. When all testing is complete, the soap solution shall be removed from the piping with a water flush.
- F. All testing shall be witnessed and signed off by the authority having jurisdiction.

3.06 TESTING, ADJUSTING AND BALANCING

- A. Prior to demolition, review and document balancing baseline information and submit report to A/E, Owner, and/or CA.
- B. After re-installation, check all equipment and perform start up in accordance with the manufacturer's instructions.
- C. Review and perform balancing check for all systems and compare to the initial readings.
- D. Calibrate controls and check for proper operation and sequence under all conditions and make all necessary adjustments.
- E. Instruct Owner in operation of systems and operating and maintenance manual for all equipment and systems.

**END OF SECTION**

## PART 1 – GENERAL

### 1.01 IN GENERAL

The General Conditions, and all parts of the Bid and Contract Documents are made part of this Section as if fully repeated herein.

### 1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Divisions 0 and 1 of the Project Manual
- B. Section 02 41 00 - Selective Demolition
- C. Section 06 10 00 - Rough Carpentry
- D. Section 07 52 00 - Elastomeric Membrane Roofing
- E. Section 07 62 00 - Sheet Metal and Flashing
- F. Section 23 05 00 - Mechanical

### 1.03 SCOPE OF WORK

- A. Provide and maintain temporary staging, portable lift, shoring, manpower, equipment, and protection as required to perform the work and protect the building and its components.
- B. Disconnect and reconnect equipment to prevent delays in the roofing schedule. Coordinate hoisting requirements and provide the materials in accordance with the schedule.
- C. Extend utility and electrical services and ductwork as required to complete the work. Please note that it is anticipated that the extension of electrical services are anticipated at the site. The Contractor will be responsible for all electrical disconnects and reconnects at no additional cost to the Owner.
- D. Testing of all cables and circuit wiring after installation.
- E. Temporary/final supports of existing conduits penetrating roof where supported by structures being removed/replaced.
- F. Examine and coordinate with the work of other trades insofar as their work comes in contact with or is covered by this work. In no case attach to, or finish against any defective work or install work in a manner which will prevent proper installation of the work of other trades.
- G. Provide new heat trace for chilled water piping at Roof Area B. Coordinate with Section 23 05 00 for mechanical scope.

- H. Provide and install outdoor, pole-mounted solar lighting for the two (2) new flag poles.
- I. Follow the FM Global Red Tag Permit System for any shut-down of the existing fire protection system(s). Refer to Section 50 70 00 "FM Global Red Tag System".

#### 1.04 DRAWINGS AND COORDINATION

- A. It is not the intention of the drawings to show every item, piece of equipment, and detail. Provide complete operating systems.
- B. It shall be the duty of this contractor to report any interferences between his work and that of any of the other contractors as soon as they are discovered. The architect shall determine which equipment will be relocated, regardless of which was installed first. His decision will be final.
- C. Install work as closely as possible to layouts shown on drawings. Modify work as necessary to meet job conditions and to clear other equipment. Consult Architect before making changes, which affect the function or appearance of systems.
- D. A/E, Owner, and/or CA reserve the right to order changes in layout of such items as switches, receptacles, and fixtures if such changes do not substantially affect costs and if affected items have not been fabricated or installed.
- E. Do not install part of a system until all critical components of the system and related systems have been approved. Coordinate parts of systems to ensure proper operation of the entire system.
- F. Install products in accordance with manufacturer's written instructions. Notify Engineer if Contract Documents conflict with manufacturer's instructions. Comply with Engineers interpretations.
- G. Provide brackets, supports, anchors, and frames required for installation of work specified herein.

#### 1.05 REFERENCES

- A. NFPA 70 - National Electrical Code; National Fire Protection Association; 2014.

#### 1.06 SUBMITTALS

- A. Provide manufacturer's ORIGINAL printed product data, catalog cuts, and description of any special installation procedures. Photocopied and/or illegible

product data sheets shall not be acceptable. All product datasheets shall be highlighted or stamped with arrows to indicate the specific components being submitted for approval.

- B. Submittals shall include the manufacturer's name, trade name, place of manufacture, catalog model or number, nameplate data, size, layout dimensions, capacity, project specification, and technical paragraph reference. Submittals shall also include applicable federal, military, industry, and technical society publication references, and years of satisfactory service, and other information necessary to establish contract compliance of each item to be provided. Photographs of existing installations are unacceptable and will be returned without approval.
- C. Submittals for each manufactured item shall be current manufacturer's descriptive literature of cataloged products, equipment drawings, diagrams, performance and characteristic curves, and catalog cuts. Handwritten and typed modifications and other notations not part of the manufacturer's preprinted data will result in the rejection of the submittal. Should manufacturer's data require supplemental information for clarification, the supplemental information shall be submitted as specified for certificates of compliance.
- D. Submit drawings a minimum of 14" x 20" in size using a minimum scale of 1/8 inch per foot except as specified otherwise. Include wiring diagrams and installation details of equipment indicating proposed location, layout, and arrangement, control panels, accessories, piping, ductwork, and other items that must be shown to ensure a coordinated installation. Wiring diagrams shall identify circuit terminals and indicate the internal wiring for each item of equipment and the interconnection between each item of equipment. Drawings shall indicate adequate clearance for operation, maintenance, and replacement of operating equipment devices.
- E. Where installation procedures or part of the installation procedures are required to be in accordance with manufacturer's instructions, submit printed copies of those instructions prior to installation. Installation of the item shall not proceed until manufacturer's instructions are received. Failure to submit manufacturer's instructions shall be cause for rejection of the equipment or material.
- F. Submit manufacturer's certifications as required for products, materials, finishes, and equipment as specified in the technical sections. Certificates from material suppliers are not acceptable. Preprinted certifications and copies of previously submitted documents will not be acceptable. The manufacturer's certifications shall name the appropriate products, equipment, or materials and the publication specified as controlling the quality of that item. Certification shall not contain statements to imply that the item does not meet requirements specified, such as

"as good as"; "achieve the same end use and results as materials formulated in accordance with the referenced publications"; or "equal or exceed the service and performance of the specified material." Certifications shall simply state that the item conforms to the requirements specified. Certificates shall be printed on the manufacturer's letterhead and shall be signed by the manufacturer's official authorized to sign certificates of compliance.

- G. Where equipment or materials are specified to conform to industry and technical society reference standards of the organizations such as American National Standards Institute (ANSI), American Society for Testing and Materials (ASTM), National Electrical Manufacturers Association (NEMA), Underwriters Laboratories Inc. (UL), and Association of Edison Illuminating Companies (AEIC), submit proof of such compliance. The label or listing by the specified organization will be acceptable evidence of compliance.
- H. Submit sample of manufacturer's three (3) year limited warranty.
- I. Submit roof plan for each building showing the proposed heating cable system layout, sensor locations, control panel locations, and connections to the main electrical panel(s).

#### 1.07 QUALITY ASSURANCE

- A. Material and Equipment Qualifications
  - 1. Provide materials and equipment that are products of manufacturers regularly engaged in the production of such products, which are of equal material, design, and workmanship. Products shall have been in satisfactory commercial or industrial use for two (2) years prior to bid opening. The two (2)-year period shall include applications of equipment and materials under similar circumstances and of similar size. The product shall have been on sale on the commercial market through advertisements, manufacturers' catalogs, or brochures during the two (2)-year period. Where two (2) or more items of the same class of equipment are required, these items shall be products of a single manufacturer; however, the component parts of the item need not be the products of the same manufacturer unless stated in the technical section.
- B. Regulatory Requirements
  - 1. Equipment, materials, installation, and workmanship shall be in accordance with the mandatory and advisory provisions of NFPA 70.
- C. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three (3) years of documented experience.

- D. Installer Qualifications: Company specializing in performing the work of this section with minimum five (5) years of experience.

#### 1.08 COORDINATION WITH OTHER DIVISIONS

- A. Carry out all work in conjunction with other trades and give full cooperation in order that all work may proceed with a minimum of delay and interference. Particular emphasis is placed on timely installation of major apparatus and furnishing other Contractors, especially the General Contractor or Construction Manager, with information as to openings, chases, sleeves, bases, inserts, equipment locations, panels, access doors, etc. required by other trades, and to allow for serviceable access to equipment.
- B. Where the work of the Contractor will be installed in close proximity to, or will interfere with work of other trades, assist in working out space conditions to make a satisfactory adjustment.
- C. If work is installed before coordinating with other Divisions or so as to cause interference with work of other Sections, the Contractor causing the interference will make necessary changes to correct the condition without extra charge to the Owner.

#### 1.09 PRE-INSTALLATION MEETING

- A. Convene one (1) week before starting work of this section.

#### 1.10 PROJECT CONDITIONS

- A. Sequence installation to ensure utility connections are achieved in an orderly and expeditious manner.
- B. Sequence installation to conform with the project phasing indicated on the Architectural drawings.

#### 1.11 WARRANTY

- A. Upon completion of the work, and prior to final payment, the Contractor shall submit a Guarantee of his work to be free from defect in materials and workmanship. This Guarantee shall be for a period of **three (3) years** and shall be signed by a Principal of the Contractor's firm, and sealed if a corporation.
- B. Manufacturer's **one (1) year** warranty for solar light fixtures.

## 1.12 ELECTRICAL REQUIREMENTS

- A. Electrical installations shall conform to ANSI C2, NFPA 70, and requirements specified herein.
- B. Wiring and Conduit
  - 1. Provide internal wiring for components of packaged equipment as an integral part of the equipment. Provide power wiring and conduit for field-installed equipment and motor control equipment, the conduit, and wiring connecting such assemblies, or other power sources to equipment. Power and Control wiring and conduit shall be provided and shall conform to the requirements of the section specifying the associated equipment.
- C. New Work
  - 1. Provide electrical components of mechanical equipment, such as motors, motor starters, control or push-button stations, float or pressure switches, solenoid valves, integral disconnects, and other devices functioning to control mechanical equipment, as well as control wiring, and conduit to conform with the requirements of the section covering the mechanical equipment. Extended voltage range motors shall not be permitted. The interconnecting power wiring and conduit, control wiring and conduit, the motor control equipment, and the electrical power circuits shall be provided. Internal wiring for components of packaged equipment shall be provided as an integral part of the equipment. When motors and equipment furnished are larger than sizes indicated, provide any required changes to the electrical service as may be necessary and related work as a part of the work for the section specifying that motor or equipment.
- D. Lockout Requirements
  - 1. Provide disconnecting means capable of being locked out for machines and other equipment to prevent unexpected startup or release of stored energy in accordance with 29 CFR 1910.147.

## 1.13 THROUGH-PENETRATION FIRESTOP SYSTEMS

- A. Fire-stopping systems shall be submitted as shop drawing.
- B. Penetrations through fire-rated walls, ceiling, or floors and penetrations through smoke barriers, smoke-resistive construction, and construction enclosing compartmentalized areas involving both empty openings, openings containing penetration items, and openings due to flue decks shall be sealed with a U.L. approved fire-stop fitting classified for an hourly rating equivalent to the fire rating of the wall, ceiling, or floor.



## PART 2 – PRODUCTS

### 2.01 WIRE AND CABLE

- A. Color code conductors (except control and instrumentation conductors) as follows:
  - a. 208/120V System=Phase A black; Phase B red; Phase C blue; neutral white; ground green.
  - b. #12 and #10 conductors shall have continuous insulation color, as listed above.
  - c. Color code conductors larger than above, which do not have continuous insulation color by application of at least two laps of colored tape on each conductor at all points of access including junction boxes. Color tape shall be the equal of 3m products scotch #35.
- B. Conductors shall be soft annealed copper insulated for 600 volts unless specifically indicated otherwise. Aluminum conductors are not allowed on this project.
- C. Insulation type shall be type THWN for wire sizes #8 AWG and larger and THHN or THWN for #10awg and smaller. THHN shall not be used in wet or damp locations.
- D. Flexible cord shall be heavy duty type so with an equipment ground conductor in addition to the current carrying conductors.
- E. Provide #12 conductors, unless otherwise indicated.
- F. Control conductors shall be #14 minimum for NEC class I and #16 for NEC class II.
- G. Conductors #8 AWG and larger shall be stranded.
- H. Conductors #10 AWG and smaller shall be solid.
- I. Install final wiring in conduit. Concealed wiring in walls or above ceilings, or exposed in unfinished areas (where not subject to physical damage) may be run in MC or AC cable. Temporary wiring may be type NM-B.
- J. Connect #10 and smaller wires with constant pressure expandable spring type connectors, "SCOTCHLOK" by 3M or B-CAP by BUCHANAN.
- K. Connect #8 and larger wires with compression connectors or splices as manufactured by BURNDY or T&B.
- L. Insulate splicing connectors to at least 200% of the wire insulation. Use pre-stretched tubing connector insulators, 3M PST for #2 and larger conductors.

- M. Pull conductors using recognized methods and equipment leaving at least 6" wire at all junction boxes for connections.
- N. Cleanout each conduit system before pulling wire.
- O. Branch circuit wire sizes (and conduits) shall be increased from those indicated on the plans to prevent excessive voltage drop. Branch circuits shall be installed with wires of sufficient size so that voltage drop between the panel and the loads does not exceed limit of 3%.
- P. Wire sizes shall be based on the 60 degrees C. ampacities for wire sizes no. 14-1 A.W.G., and 75 degrees C. ampacities for wire sizes #1/0 A.W.G. and larger.
- Q. Circuits may be multi-plexed in conduit provided wire is properly derated and conduit sized per code. Under no circumstance shall more than (8) current carrying conductors be run in a single conduit.

## 2.02 RACEWAYS

- A. All wire shall be run in accordance with code in corrosion resistant, rigid, threaded, metal conduit or electrical metallic tubing (e.m.t.) Unless otherwise specifically stated herein.
  - a. Conduit in exterior walls, below floor slab, or underground shall be rigid, threaded, galvanized, heavy wall type.
  - b. CARLON PVC type 40 heavy wall conduit with ground wire may be used below floor slab or underground in lieu of rigid, threaded, galvanized conduit. PVC 40 conduit shall not be run in or above floor slab. PVC conduit shall terminate below floor slab with rigid, threaded metal conduit adapter. Conduit above slab shall be metal.
  - c. Conduit run exposed to the weather shall be heavy wall, metal threaded type.
- B. Provide branch circuit conductors that are type THHN or THWN as required.
- C. Conduit size shall be 3/4" minimum.
- D. Conduit shall be securely fastened in place.
- E. All final conduit shall be concealed in walls, floor and ceilings wherever possible. Exposed conduit in finished areas will not be permitted. Exposed conduit will be permitted in unfinished areas with the specific approval of the architect, and in temporary installations.
- F. Use liquid tight metal conduit for all connections to motors and other equipment subject to vibration and in areas subject to moisture.

- G. Use watertight joints with buried and concrete encased conduit. All buried conduits outside of buildings shall have a minimum of 24" of cover. Metal conduits buried in earth shall be painted (two coats) with heavy Asphaltum paint.
- H. Support runs of conduit as detailed in the appropriate table of the national electrical code (NEC).
- I. If a conduit is suspended, it shall be supported on trapeze hangers which use "all-thread" rods from the structural steel. The use of ceiling support wire or similar material will not be accepted.
- J. Provide Pitchpockets where conduits penetrate the roof.
- K. Thread lubrication/sealant is required on outdoor and underground threaded metal joints.
- L. Install fire seal fittings where conduits penetrate concrete floor slabs or masonry walls required to be fire rated.
- M. Horizontal portion of conduit exposed on the roof and feeding equipment shall not be more than 5'-0" unless the written approval from architect or engineer is obtained.

#### 2.03 PULL AND JUNCTION BOXES

- A. Install pull and junction boxes where shown on the drawings, and where required for changes in direction, at junction points, and to facilitate wire pulling. Furnish box sizes in accordance with NEC unless larger boxes are indicated.
- B. Provide steel boxes and removable covers of code gage, hot rolled sheet steel, hot dipped galvanized inside and outside, for above ground work. Furnish weatherproof boxes when installed above ground outside.
- C. Provide cast iron boxes, hot dipped galvanized inside and outside where shown on the drawings. Furnish removable covers with gaskets and stainless steel, brass or bronze screws.

#### 2.04 EXTERIOR LIGHTING

- A. Pole-mounted, solar-powered LED light fixture with three (3) multi-LED light heads on extension poles, producing at least 400 LUX total.
- B. Mounting brackets and hardware for fitment to 6" diameter flag poles.

## 2.05 PIPE HEAT TRACE

- A. Self-regulating, job-ready, plug-in trace heating cable and thermostat system suitable for installation on the outside of exterior metallic pipes
- B. System to include integral GFIC protection with 4'-0" power lead and a maximum length of 120 feet.
- C. Basis of Design is a 120-volt system @ 5 watts per linear foot. It is the intent to match the voltage of the existing heat trace system.
- D. Aluminum foil tape for primary securement to pipe. Supplement with plastic cable ties if needed.
- E. Limited 5-year warranty

## 2.06 DISCONNECT SWITCH FOR ROOFTOP EXHAUST FAN

- A. Disconnect switch shall be rated for the maximum voltage, phase, and amperage of the existing rooftop exhaust fan.
- B. Install disconnect switch within the housing of the fan and in accordance with the National Electric Code.

## PART 3 – EXECUTION

### 3.01 INSTALLATION

- A. The electrical work for construction proposed shall conform to all federal (OSHA), state, all specific safety requirements and the requirements of the current edition of the NEC.
- B. Coordinate with the HVAC specifications for electrical requirements and include the same in the contract cost.
- C. Install all products in accordance with the manufacturer's instructions and in accordance with NFPA 70.
- D. The equipment should be installed by qualified personnel who are familiar with the construction and operation of the apparatus and risks involved.
- E. Caution should be taken to guard against risk of electric shock, fire, and bodily injury during the installation of this equipment.

- F. Cable ends must be terminated with end seals.
- G. Bus wires and cable terminations should be kept dry before, during, and after installation.

### 3.02 HEAT TRACE

- A. Do not install in temperatures below -40 degrees F.
- B. Remove old heating tapes and insulation from existing piping abutting new sections.
- C. Minimum bending radius for heat trace cable is 1/2"
- D. Do not run the heating cable through walls
- E. Connect cable only to properly grounded outlets
- F. Install heat trace in a dual-trace configuration, wrapping fittings and/or valves with extra cable
- G. Heating cable may be overlapped. Use a guard to protect against sharp edges. Avoid excessive pulling force, kinking, and crushing during installation.
- H. Secure to pipe at the 4 and 8 o'clock positions using a continuous application of aluminum foil tape, using plastic cable ties as needed.
- I. Do not cut the heating cable to shorten. If longer than the pipe, loop the extra cable back along the pipe in a spiral.
- J. Review the cable for damage prior to insulating.
- K. Apply labels to new and existing external pipe jacketing at 10-foot intervals to indicate the presence of electric cables.

### 3.03 CLEANING

- A. Clean the entire installation at substantial completion.
- B. Protect installed equipment from subsequent construction operations.

**END OF SECTION**

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## PART 1 - GENERAL

### 1.01 IN GENERAL

The General Conditions and all parts of the Bid and Contract Documents are made part of this Section as if fully repeated herein.

### 1.02 RELATED WORK SPECIFIED ELSEWHERE:

- A. Divisions 0 and 1 of the Project Manual
- B. Section 03 30 00 - Cast In Place Concrete
- C. Section 04 50 00 - Masonry
- D. Section 10 75 16 - Flagpoles
- E. Section 26 05 02 - Electrical

### 1.03 SUMMARY OF WORK

This Section specifies requirements for the following Scope of Work:

- A. In general, the Contractor shall supply all labor, materials, equipment, temporary protection, tools and appliances necessary for the proper completion of the work in this section, as required in the specifications and in accordance with good construction practice.
- B. Preparing subgrades for structures and replacement soils and landscaping.
- C. Excavating and backfilling for new foundation structures.
- D. Construction dewatering and erosion control for excavations and stockpile areas.
- E. Subbase and base course for brick paving.
- F. Remove and replace unsuitable existing fill material.
- G. Protecting existing trees and vegetation to remain, including temporary fencing for trees in close proximity to construction operations.
- H. Coordinate with Section 04 50 00 Masonry for brick paving and setting bed over cast-in-place foundations.
- I. Clean all areas affected by the work to the satisfaction of the Owner.

### 1.04 DEFINITIONS

- A. Backfill: Soil material or controlled low-strength material used to fill an excavation.
  - 1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
  - 2. Final Backfill: Backfill placed over initial backfill to fill a trench.

- B. Base Course: Course placed between the subbase course and hot-mix asphalt paving.
- C. Bedding Course: Course placed over the excavated subgrade in a trench before laying pipe.
- D. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.
- E. Drainage Course: Course supporting slab-on-grade that also minimizes upward capillary flow of pore water.
- F. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.
  - 1. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by Designer. Authorized additional excavation and replacement material will be paid for according to Contract provisions for unit prices.
  - 2. Bulk Excavation: Excavation more than 10 feet in width and more than 30 feet in length.
  - 3. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Designer. Unauthorized excavation, as well as remedial work directed by Designer, shall be without additional compensation.
- G. Fill: Suitable soil materials used to raise existing grades.
- H. Rock: Rock material in beds, ledges, unstratified masses, conglomerate deposits, and boulders of rock material that exceed 1 cu. yd. for bulk excavation or 3/4 cu. yd. for footing, trench, and pit excavation that cannot be removed by rock excavating equipment without systematic drilling, ram hammering, ripping, or blasting, when permitted.
- I. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.
- J. Subbase Course: Course placed between the subgrade and base course for hot-mix asphalt pavement, or course placed between the subgrade and a cement concrete pavement or a cement concrete or hot-mix asphalt walk.
- K. Subgrade: Surface or elevation remaining after completing excavation, or top surface of a fill or backfill immediately below subbase, drainage fill, or topsoil materials.
- L. Utilities: On-site underground pipes, conduits, ducts, and cables, as well as underground services within buildings.



#### 1.05 SUBMITTALS

- A. Photographs sufficiently detailed, of existing conditions of trees and plantings, adjoining construction, and site improvements that might be misconstrued as damage caused by site clearing.
- B. Product Data: For the following:
  - 1. Each type of plastic warning tape.
  - 2. Geotextile.

#### 1.06 PROJECT CONDITIONS

- A. Erosion control measures shall be established at the beginning of construction and maintained during the entire period of construction. On-site areas which are subject to severe erosion, and off-site areas which are especially vulnerable to damage from erosion and/or sedimentation, are to be identified and receive special attention.
- B. All land-disturbing activities are to be planned and conducted to minimize the size of the area to be exposed at any one time, and the length of time of exposure.
- C. The Contractor shall be responsible for securing and protecting his/her equipment, materials and tools (as well as partially completed construction) from wind blow-off and vandalism or abuse.
- D. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.
  - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from the Owner and authorities having jurisdiction.
  - 2. Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.
- E. Utility Locator Service: Notify utility locator service for area where Project is located before site clearing.
- F. Do not commence site clearing operations until erosion and sedimentation control measures are in place.

#### 1.07 PERFORMANCE REQUIREMENTS

- A. Design, furnish, install, monitor, and maintain excavation support and protection system capable of supporting excavation sidewalls and of resisting soil and hydrostatic pressure and superimposed and construction loads.
  - 1. Provide professional engineering services needed to assume engineering responsibility, including preparation of Shop Drawings and a comprehensive engineering analysis by a qualified professional engineer.

2. Prevent surface water from entering excavations by grading, dikes, or other means.
  3. Install excavation support and protection systems without damaging existing buildings, pavements, and other improvements adjacent to excavation.
  4. Provide vibration monitoring to prevent impacts on adjacent structures and utilities.
- B. Dewatering Performance: Design, furnish, install, test, operate, monitor, and maintain dewatering system of sufficient scope, size, and capacity to control hydrostatic pressures and to lower, control, remove, and dispose of ground water and permit excavation and construction to proceed on dry, stable subgrades.
- C. Delegated Design: Design dewatering system, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.
1. Test liquids for hazardous waste at start of construction operations and provide on-site remediation as acceptable to authorities having jurisdiction.
  2. Continuously monitor and maintain dewatering operations to ensure erosion control, stability of excavations and constructed slopes, that excavation does not flood, and that damage to subgrades and permanent structures is prevented.
  3. Prevent surface water from entering excavations by grading, dikes, or other means.
  4. Accomplish dewatering without damaging existing buildings, structures, and site improvements adjacent to excavation.
  5. Remove dewatering system when no longer required for construction.

#### 1.08 QUALITY CONTROL AND ASSURANCE

- A. Compaction and materials testing results shall be submitted to the Engineer for review as outlined in the following sections.
- B. Special Inspections are required for controlled structural fill, Coordinate with the Architect/Engineer, Owner, and/or CA to schedule inspection so as not to delay the work.
- C. Footing Subgrade: At footing subgrades, at least one test of each soil stratum will be performed to verify design bearing capacities. Subsequent verification and approval of other footing subgrades may be based on a visual comparison of subgrade with tested subgrade when approved by Designer.

## PART 2 – PRODUCTS

### 2.01 EROSION CONTROL

- A. Siltation Fence: Fabricated or prefabricated unit consisting of the following filter fabric properties:
- |    |                                     |          |                     |
|----|-------------------------------------|----------|---------------------|
| 1. | Grab Tensile Strength               | 90       | ASTM D1682          |
| 2. | Elongation at Failure (%)           | 50       | ASTM D1682          |
| 3. | Mullen Burst Strength (PSI)         | 190      | ASTM D3786          |
| 4. | Puncture Strength (lbs.)            | 70       | ASTMD751(modified)  |
| 5. | Slurry Flow Rate (gal/min/sf)       | 0.5      | Virginia DOT VTM-51 |
| 6. | Equivalent Opening Size             | 40-80 US | Std Sieve CW-02215  |
| 7. | Ultraviolet Radiation Stability (%) | 90       | ASTM G26            |
- B. Fencing: Steel posts shall be standard 6-foot long metal stamped drive stakes commonly used to support snow fences. Fencing shall be new 4-foot height wood lath snow fencing. Provide suitable steel staples or heavy nylon cord for securing filter cloth to support system.
- C. Silt Socks: The silt socks for construction of erosion control devices shall be 12-inch in diameter. In areas of slope greater than 2:1(horizontal: vertical), silt sock must be secured in place by stakes. Silt socks shall be either lapped or butted at the ends to create a continuous line.
- D. Stakes: Stakes for silt socks shall be one of the following materials: Wood stakes of sound hardwood 2 by 2 inches in size or steel reinforcing bars of at least No. 4 size. Lengths shall be approximately three feet.
- E. Protective Measures: As temporary coverings on ground areas subject to erosion, provide one of the following protective measures, and as directed by the Engineer:
1. Hay or straw temporary mulch, 100 pounds per 1,000 square feet.
  2. Wood fiber cellulose temporary mulch, 35 pounds per 1,000 square feet.
  3. Tackafier for anchoring mulch or straw shall be a non-petroleum based liquid bonding agent specifically made for anchoring hay or straw.
  4. Provide natural (jute, wood excelsior) or man-made (glass fiber) covering with suitable staples or anchors to secure to ground surface. Note that wire stapes and non-biodegradable coverings shall not be used for any area that will be mown turf.
  5. Temporary vegetative cover for graded areas shall be undamaged, air dry threshed straw or hay free of undesirable weed seed.
  6. Provide temporary settling basis as shown on the contract drawings and described in the specifications.

### 2.02 SOIL MATERIALS

- A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.

- B. Satisfactory Soils: ASTM D 2487 Soil Classification Groups GW, GP, GM, SW, SP, and SM or a combination of these groups; free of rock or gravel larger than 3 inches in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.
- C. Common Fill: Imported Common Fill should consist of Satisfactory Soils having a maximum particle size of 6 inches and no more than 25 percent by weight passing the US No. 200 sieve.
- D. Unsatisfactory Soils: Soil Classification Groups GC, SC, CL, ML, OL, CH, MH, OH, and PT according to ASTM D 2487, or a combination of these groups.
- E. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.
- F. Subbase Material: Material meeting the minimum requirements for Processed Gravel, as defined by the gradation:

Percent Passing

Sieve Size	By Weight
3 in.	100
1-½ in.	70-100
¾ in.	50-85
No. 4	30-60
No. 200	0-10

- G. Base Course: Material meeting the minimum requirements for Dense-graded Crushed Stone, as defined by gradation:

Percent Passing

Sieve Size	By Weight
2 in.	100
1-1/2 in.	70-100
¾ in.	50-85
No. 4	30-55
No. 50	8-24
No. 200	3-10

- H. New Topsoil for Lawns (Topsoil Mix/Amended Topsoil):

1. New Topsoil (Topsoil Mix): Shall be natural, fertile loam, typically cultivated topsoils of the locality, containing not less than 4% or more than 8% by weight, of decayed organic matter (humus), as determined in ASTM F-1647. If organic amendments are needed to obtain the specified matter content of the topsoil, the organic matter source may be a peat or compost material.
  2. Topsoil shall be taken from a well-drained, arable site, free of subsoil, slag and any stones, earth clods, sticks, stumps, clay lumps, roots or other objectionable, extraneous matter or debris over 3/4 inch in any dimension.
  3. Topsoil shall be free of Quack-grass rhizomes, Agropyron Repens, and the nut-like tubers of Nutgrass, Cyperus Esculentus, and all other primary noxious weeds.
  4. Topsoil shall have a pH not less than 6.0 or greater than 7.0.
  5. Topsoil shall not have soluble salts greater than 500 parts per million.
  6. Topsoil mix (amended topsoil) shall have target Nutrient levels of Phosphorus (P), Potassium (K), Calcium (C) and Magnesium (Mg) in the Optimum Range as determined local Agricultural Extension Service Topsoil testing recommendations for Sportsturf/Golf Fairway Lawn Establishment.
  7. Topsoil shall be a loamy sand, sandy loam, loam, sandy clay loam as defined by the USDA, as determined by Pipette Method, in compliance with ASTM F-1632.
  8. Topsoil shall not be delivered or placed while in a frozen or muddy condition.
- I. Seed
1. Grass seed shall be clean, new crop seed, composed of a mixture of varieties, mixed in proportion by weight and tested for minimum percentages of purity and germination. Submit proposed mixture to the Engineer / Landscape Architect for approval.
  2. General Lawn Area Seed Mix:
    - a. Perennial Ryegrass: 40%
    - b. Chewing Fescue: 30%
    - c. Kentucky Bluegrass: 30%

## PART 3 - EXECUTION

### 3.01 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards that could develop during excavation support and protection system operations.
  1. Shore, support, and protect utilities encountered.
- B. Install erosion control system prior to starting excavation work.

- C. Install dewatering system to ensure minimum interference with roads, streets, walks, and other adjacent occupied and used facilities.
  - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.
- D. Install excavation support and protection systems to ensure minimum interference with roads, streets, walks, and other adjacent occupied and used facilities.
  - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.
- E. Locate excavation support and protection systems clear of permanent construction so that forming and finishing of concrete surfaces are not impeded.
- F. Monitor excavation support and protection systems daily during excavation progress and for as long as excavation remains open. Promptly correct bulges, breakage, or other evidence of movement to ensure that excavation support and protection systems remain stable.
- G. Promptly repair damages to adjacent facilities caused by installing excavation support and protection systems.
- H. Locate and clearly flag trees and vegetation to remain or to be relocated.
- I. Protect existing site improvements to remain from damage during construction.
  - 1. Restore damaged improvements to their original condition, as acceptable to the Owner.

### 3.02 TREE PROTECTION

- A. Erect and maintain temporary fencing around tree protection zones before starting site clearing. Remove fence when construction is complete.
  - 1. Do not store construction materials, debris, or excavated material within fenced area.
  - 2. Do not permit vehicles, equipment, or foot traffic within fenced area.
  - 3. Maintain fenced area free of weeds and trash.
  - 4. Except as otherwise directed, cutting and trimming of existing trees will not be permitted.
- B. Do not excavate within tree protection zones, unless otherwise indicated.

### 3.03 UTILITIES

- A. Locate utilities within the work area prior to starting work.

1. Arrange with utility companies to shut off indicated utilities as need within the work area.
- B. Existing Utilities: Do not interrupt utilities serving facilities occupied by the Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
  1. Notify the Owner not less than two days in advance of proposed utility interruptions.
  2. Do not proceed with utility interruptions without the Owner's written permission.

### 3.04 SILT FENCING

- A. Excavate a 6-inch trench along the upstream side of the desired fence location.
- B. Drive fence posts a minimum of 1'-6 inch into the ground. Install fence, well-staked at maximum 8-foot intervals in locations as shown on Drawings. Secure fabric to fence and bury fabric end within the 6-inch deep trench cut.
- C. Lay lower 12 inches of silt fence into the trench, 6 inches deep and 6 inches wide. Backfill trench and compact.
- D. Overlap joints in fabric at post to prevent leakage of silt at seam.

### 3.05 VEGETATIVE STABILIZATION / TEMPORARY SEEDING

- A. Grassing shall be applied according to State of Connecticut DOT Standard Specifications.

### 3.06 INLET PROTECTION

- A. Install silt fence or straw bales around inlet as specified herein.

### 3.07 SILT SOCKS

- A. Silt Socks shall be constructed and installed as required by the order of conditions prior to the start of work.

### 3.08 DUST CONTROL

- A. Throughout the construction period the Contractor shall carry on an active program for the control of fugitive dust within all site construction zones, or areas disturbed as a result of construction. Control methods shall include the following: Apply calcium chloride at a uniform rate of one and one-half (1 ½) pounds per square yard in areas subject to blowing. For emergency control of dust apply water to affected areas. The source of supply and the method of application for water are the responsibility of the contractor.

- B. The frequency and methods of application for fugitive dust control shall be as directed by the Engineer.

### 3.09 TOPSOIL STRIPPING

- A. Remove sod and grass before stripping topsoil.
- B. Strip topsoil to whatever depths are encountered in a manner to prevent intermingling with underlying subsoil or other waste materials.
  - 1. Remove subsoil and non-soil materials from topsoil, including trash, debris, weeds, roots, and other waste materials.
- C. Stockpile topsoil materials away from edge of excavations without intermixing with subsoil. Grade and shape stockpiles to drain surface water. Cover to prevent saturation, windblown dust or contamination by air-borne weed seed.
  - 1. Limit height of topsoil stockpiles to 72 inches.
  - 2. Do not stockpile topsoil within tree protection zones.
  - 3. Surround stockpiles with silt fence.
- D. Topsoil that has been stripped and stockpiled but is not needed after the completion of all final topsoil spreading and grassing, shall become the property of the Contractor and shall be removed and disposed of offsite.

### 3.10 EXCAVATION AND STORAGE OF SOIL

- A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch. If applicable, extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections.
  - 1. Excavations for Footings and Foundations: Do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other work.
- B. Stockpile borrow soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
  - 1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees, if applicable.

### 3.11 SUBGRADE INSPECTION

- A. Notify Architect/Engineer, Owner, and/or CA when excavations have reached required subgrade.
- B. If A/E and/or CA determine that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed and specified herein.



- C. Proof-roll subgrade below the building slabs and pavements with suitable equipment, as specified herein, to identify soft pockets and areas of excess yielding. During the proofrolling process, the subgrade shall be reviewed by the Engineer to identify unstable zones. Where fine-grained subgrades are present, proofrolling may need to be accomplished statically, to reduce the potential for disturbing the subgrade. Do not proof-roll wet or saturated subgrades.
1. Completely proof-roll subgrade in one direction, repeating proof-rolling in direction perpendicular to first direction. Limit vehicle speed to 3 mph.
  2. Proof-roll with minimum 10-ton vibratory rollers or a loaded 10-wheel, tandem-axle dump truck weighing not less than 15 tons, in open areas or a minimum 1-ton walk-behind roller or large plate compactor in trenches or confined areas.
  3. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by Designer, and replace with compacted backfill or fill as recommended by the Engineer.
- D. The Contractor shall be responsible for maintaining stable soil subgrades. Fine-grained subgrade soils exposed during construction are anticipated to be easily disturbed by construction traffic and are likely to become unstable when above the optimum moisture content. The Contractor shall be responsible for managing construction traffic, stockpiling of materials, and providing routine maintenance to protect subgrades from disturbance. Where subgrades are damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, they shall be reconstructed as directed by the A/E and/or CA, without additional compensation.

### 3.12 BACKFILL

- A. Place and compact backfill in excavations promptly, but not before completing the following:
1. Observing and accepting subgrade.
  2. Surveying locations of underground utilities for Record Documents.
  3. Removing concrete formwork.
  4. Removing trash and debris.
  5. Removing temporary shoring and bracing, and sheeting.
  6. Installing permanent or temporary horizontal bracing on horizontally supported walls.
- B. Place backfill on subgrades free of mud, frost, snow, or ice.
- C. Place backfill and fill soil materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.
- D. Place backfill and fill soil materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure.

- E. Compact soil materials to not less than the following percentages of maximum dry unit weight according to ASTM D 1557:
  - 1. Under pavements, scarify and recompact top 12 inches of existing subgrade and each layer of backfill or fill soil material at 95 percent; and areas within 10 feet of structures and pavements at 92 percent.
  - 2. Under lawn or unpaved areas, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 90 percent.
  
- F. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
  - 1. Provide a smooth transition between adjacent existing grades and new grades.
  - 2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.
  
- G. Site Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades within the following tolerances:
  - 1. Lawn or Unpaved Areas: Plus or minus 1 inch.
  - 2. Walks: Plus or minus 1/2 inch. Tolerance will not alleviate the contractor's responsibility to meet required slopes in Accessible areas.
  - 3. Pavements: Plus or minus 1/4 inch.

### 3.13 SEEDING

- A. Schedule for Seeding: Sow grass seed between April 1 and May 31, or between August 15 and October 1, except as otherwise approved in writing by the Engineer / Landscape Architect.
  
- B. If seeding out of season, as described above, the Contractor is still obligated by all conditions and responsibilities described under LAWN MAINTENANCE, until final acceptance of all lawn areas.
  
- C. Before seed is sown, scarify soil and rake until surface is smooth, friable and of uniformly fine texture. Seed evenly at supplier's recommendation rates, lightly rake and water with fine spray. Do not use wet seed which is moldy or otherwise damaged in transit or storage.

### 3.14 LAWN MAINTENANCE

- A. Maintenance of the grass areas shall begin immediately and generally consist of watering, weeding, fertilization, mowing and edging, reseeding, disease and insect pest control, repair of all erosion, and any other procedure consistent with good horticultural practice, as necessary to insure normal, vigorous and healthy growth.

- B. After grass has appeared, reseed all areas which have failed to show a uniform stand of grass.
- C. Maintenance shall also include filling, regrading and reseeding, as necessary, to correct depressions caused by settling, subsidence or other physical or mechanical damage.
- D. Maintenance shall also include all temporary protection fences, barriers, signs and all other work incidental to proper maintenance.

### 3.15 PROTECTION

- A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.
- B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.
  - 1. Scarify or remove and replace soil material to depth as directed by Designer; reshape and recompact.
- C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.
  - 1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

**END OF SECTION**

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# **Section 50 10 00 Existing Conditions Asphalt Shingles**

**EAGLE ROOF SERVICES, LLC.**  
**P.O. BOX 535**  
**SUFFIELD, CT 06078**  
**(860) 989-8716 Tel**  
**(860) 239-1002 Fax**

December 6, 2012

Mr. Phillip Prue, SMT, SMA  
Lead Mechanical Technician  
R.M. Bradley Management Corp.  
450 Capitol Avenue  
Hartford, CT 06106

Re: 474 Capitol Avenue, Hartford

Dear Mr. Prue:

We have made a visual inspection of the roofs on 474 Capitol Avenue (Boiler Bldg, Pump Room and East and West Roofs) and found them to be in poor condition. The shingles are **extremely** brittle with cracks and splits. There are also several missing shingles. The valley area between the Boiler Room and Pump Room has been replaced but leaks occur here due to the condition of the **adjacent** shingles. There is evidence of structural damage to wood rafters and **supports** from roof leaks. These roofs should be replaced. We offer the following job scope and prices for reroofing these buildings.

**Scope of Work**  
**Boiler and Pump Room**

- Remove the existing shingles to the wood deck at the pump room roof and the East side Boiler roof area adjacent to the valley between both buildings. Copper gutters to remain in place.
- Remove the modified bitumen and built up roof valley area between the two buildings.
- Install a fully adhered EPDM membrane roof system over ½" high density fiberboard insulation in the roof valley.
- Install ice and water barrier along roof eaves and along EPDM flashing in the valley.
- Install 15# asphalt felt underlayment over **remaining** roof area.
- Install new GAF/ELK "Timberline HD" limited lifetime guaranteed architectural shingles per manufacturer's specifications.
- Install new copper step flashings at wall and **chimneys**.

**Install new copper flashings at the three chimneys located at the roof eave of the pump room building. All other copper flashings will be re-used.**

- Install a self-ventilating ridge membrane along roof ridge and cap it and the roof hips of the boiler building with heavy duty hip and ridge shingles.

The cost for this work at the Pump Room is **\$32,000.00** excluding any applicable taxes or permit fees.

The cost to include removing and replacing the shingles on the Boiler Building will cost an additional **\$19,500.00** excluding any applicable taxes or permit fees.

The cost to install new GAF/ELK "Timberline HD" limited lifetime guaranteed shingles over the existing shingles on The East Roof is **\$30,500.00** excluding any applicable taxes or permit fees.

The cost to install new GAF/ELK "Timberline HD" limited lifetime guaranteed shingles over the existing shingles on The West Roof is **\$24,500.00** excluding any applicable taxes or permit fees.

If you have any questions or if we may be of further service please do not hesitate to contact us.

Sincerely

*As Dnr*

Eagle Roof Services

460 & 470 CAPITOL AVENUE, HARTFORD, CT  
ROOF REPLACEMENT AND  
WEATHERPROOFING  
DECEMBER 3, 2018

DIVISION 50  
SECTION 50 10 00  
EXISTING CONDITIONS ASPHALT SHINGLES  
PAGE 4 OF 4

**END OF SECTION**



# **Section 50 30 00 Hazardous Building Materials Inspection and Inventory**

# REPORT

## PRE-RENOVATION INVESTIGATIVE SURVEY FOR ASBESTOS- CONTAINING MATERIALS 460-470 CAPITAL AVENUE HARTFORD, CONNECTICUT

Project No. 18-2B-HAZ-02  
DCS No. 20356, 20357

*Prepared for*

**State of Connecticut**  
**Department of Administration Services**  
**Division of Construction Services**  
Hartford, Connecticut

*Prepared by*

**TRC**  
Windsor, Connecticut

April 2, 2018

**PRE-RENOVATION  
INVESTIGATIVE SURVEY FOR  
ASBESTOS-CONTAINING MATERIALS  
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*Prepared by*  
TRC  
Windsor, Connecticut



Donald LePage  
Project Manager



Edmund J. Burke, P.E.  
Engineer in Charge

TRC Project No. 300279-0000-0000  
April 2, 2018

**TRC**  
21 Griffin Road North  
Windsor, Connecticut 06095  
Telephone (860) 298-9692  
Facsimile (860) 298-6399

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### EXECUTIVE SUMMARY

On March 6, 2018 TRC of Windsor, Connecticut conducted an inspection for suspect asbestos-containing materials (ACM) at 460-470 Capital Avenue in Hartford, Connecticut. The inspection was initiated prior to planned renovation activities in accordance with USEPA Asbestos National Emissions Standard for Hazardous Air Pollutants (NESHAPS) requirements.

The scope of the inspection was limited to the roof areas at the subject site. A Connecticut licensed asbestos inspector from TRC conducted the inspection in accordance with USEPA AHERA protocols and ASTM Standard E2356-04. Bulk samples of suspect materials were collected and analyzed via polarized light microscopy (PLM) and/or PLM gravimetric analysis methods at a CTDPH/NVLAP accredited laboratory. ACM was identified as asphalt shingles and various types of flashings on Roofs A, B, C and D. ACM to be impacted by renovation activities must be removed prior to disturbance in accordance with OSHA, USEPA, CTDPH, and CTDEEP standards for asbestos abatement/disposal. Detailed results of the asbestos survey can be found in Tables 1-3 and Appendices A through E.

**PROJECT OUTLINE**

Project Address: 460-470 Capital Avenue  
Hartford, CT

DCS Contract No. 13PSX0017

DCS Project Manager: Michael Sanders

DCS Project No.: 18-2B-HAZ-02

DCS Building No: 20356, 20357

TRC Project No.: 300279-0000-0000

TRC Project Manager: Don LePage

Asbestos Inspector: Eric Gitberg (LIC #000984)

Date of Inspection: 3/6/18

Asbestos Identified: Yes

Additional Notes:

The site investigation was limited to the collection and analysis of suspect asbestos-containing materials from the exterior roof areas of the subject building.

## TABLES

**TABLE 1  
 BULK SAMPLE SUMMARY OF SUSPECT ASBESTOS CONTAINING MATERIALS  
 460-470 CAPITAL AVENUE  
 HARTFORD, CONNECTICUT**

Sample No.	Sample Location	Homogeneous Material	% and Type Asbestos
01	Roof C – Pitched areas	AS1-“Sawtooth” Asphalt Shingles	10% chrysotile
02	Roof C – Pitched areas	AS1-“Sawtooth” Asphalt Shingles	NA/PS
03	Roof C – Base of pitched areas	PFL1-Penetration flashing	10% chrysotile
04	Roof C - Base of pitched areas	PFL1-Penetration flashing	NA/PS
05	Roof D – Exhaust Hood	PFL2-Penetration flashing	5% chrysotile
06	Roof D – Exhaust Hood	PFL2-Penetration flashing	NA/PS
07	Roof A – Skylight	PFL3-Penetration flashing	10% chrysotile
08	Roof A - Skylight	PFL3-Penetration flashing	NA/PS
09	Roof C	PF1- Perimeter flashing	20% chrysotile
10	Roof C	PF1- Perimeter flashing	NA/PS
11	Roof D	PF2- Perimeter flashing	10% chrysotile
12	Roof D	PF2-Perimeter flashing	NA/PS
13	Roof A	PF3-Perimeter flashing	10% chrysotile
14	Roof A	PF3-Perimeter flashing	NA/PS
15	Roof A	PF4-Perimeter flashing	20% chrysotile
16	Roof A	PF4- Perimeter flashing	NA/PS
17	Roof B	PF5-Perimeter flashing	10% chrysotile
18	Roof B	PF5-Perimeter flashing	NA/PS
19	Roof A	MR1-Area of room “urma roof” Concrete to tar to Styrofoam to gravel	ND
20	Roof A	MR1-Area of room “urma roof” Concrete to tar to Styrofoam to gravel	ND
21	Roof C	MR2-Area of roof, built up tar to gravel. Wood Deck.	ND
22	Roof C	MR2-Area of roof, built up tar to gravel. Wood Deck.	ND

NA/PVA Not analyzed/positive via inseparable association with a confirmed positive ACM  
 NA/PS Not analyzed/positive stop, homogeneous to sample proven to contain asbestos  
 ND<1% Non-detected, less than 1%  
 NAD No asbestos detected  
 + Although found to be negative by analysis, material is homogeneous to a determined ACM and therefore must be considered positive  
 I NOB material; result confirmed by TEM analyses  
 \* Analyzed by EPA/600/R-93/116 with gravimetric reduction



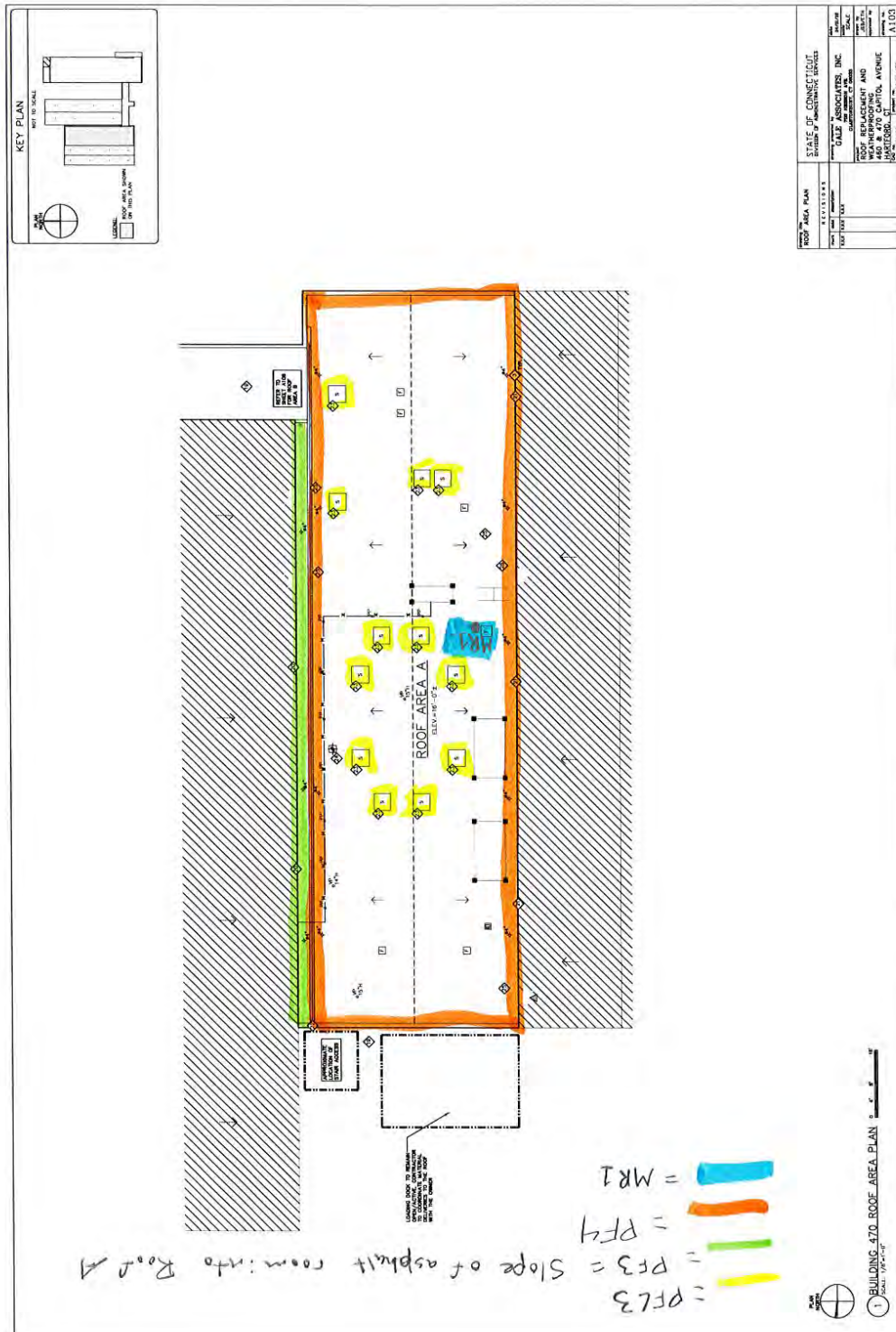
<b>TABLE 2                      IDENTIFIED ASBESTOS CONTAINING MATERIALS (&gt;1%)                      460-470 CAPITAL AVENUE                      HARTFORD, CONNECTICUT</b>					
Material	Sampled- Assumed (mo/yr)	General Location	NESHAP Category	AHERA Category	Estimated Quantity
AS1-"Sawtooth" Asphalt Shingles	Sampled 3/18	Roof C – Pitched areas	Category I Non-friable	Miscellaneous	1,500 SF
PFL1-Penetration flashing	Sampled 3/18	Roof C – Base of pitched areas	Category I Non-friable	Miscellaneous	360 SF
PFL2-Penetration flashing	Sampled 3/18	Roof D – Exhaust Hood	Category I Non-friable	Miscellaneous	135 SF
PFL3-Penetration flashing	Sampled 3/18	Roof A – Skylights	Category I Non-friable	Miscellaneous	144 SF
PF1- Perimeter flashing	Sampled 3/18	Roof C	Category I Non-friable	Miscellaneous	550 SF
PF2- Perimeter flashing	Sampled 3/18	Roof D	Category I Non-friable	Miscellaneous	120 SF
PF3-Perimeter flashing	Sampled 3/18	Roof A	Category I Non-friable	Miscellaneous	125 SF
PF4-Perimeter flashing	Sampled 3/18	Roof A exhaust hoods	Category I Non-friable	Miscellaneous	400 SF
PF5-Perimeter flashing	Sampled 3/18	Roof B	Category I Non-friable	Miscellaneous	250 SF

*\* Roof tars have been completely exempted from OSHA Asbestos regulations and, as a Category I Non-friable material, do not need to be removed from a structure prior to renovation/demolition under EPA Asbestos NESHAP regulations and, so long as the materials are exterior to a structure and will remain Category I Non-friable materials during renovation/demolition, are not covered under the CTDPH Asbestos Abatement standards. In addition, as Category I Non-friable materials, the roof tars do not need to be disposed of as asbestos waste under the EPA Asbestos NESHAP regulations; however, the CTDEEP special waste regulations would not allow the material to be disposed of as general construction waste within the State of Connecticut. Disposal of the roof tars as general construction waste (so long as the materials are not rendered into a state which would define them as regulated asbestos-containing materials (RACM), i.e., friable) is, however, allowed in other states such as Massachusetts.*

AHERA Categories = thermal system insulation (TSI), surfacing material or miscellaneous  
 NESHAP Categories = friable, category I non-friable or category II non-friable  
 Friable = crumbled, pulverized or reduced to powder by hand pressure when dry  
 Category I Non-friable = packings, gaskets, resilient floor covering and asphalt roofing  
 Category II Non-friable = all non-friable that is not Category I

<b>TABLE 3 CONFIRMED NON-ASBESTOS CONTAINING MATERIALS 460-470 CAPITAL AVENUE HARTFORD, CONNECTICUT</b>	
<b>Material</b>	<b>General Location</b>
MR1-Area of room "urma roof" Concrete to tar to Styrofoam to gravel	Roof A, Roof B
MR2-Area of roof, built up tar to gravel. Wood Deck.	Roof C, Roof D

**APPENDIX A**  
**SITE SKETCHES**







**APPENDIX B**  
**LABORATORY AND INSPECTOR ACCREDITATIONS**



State of Connecticut

### Lookup Detail View

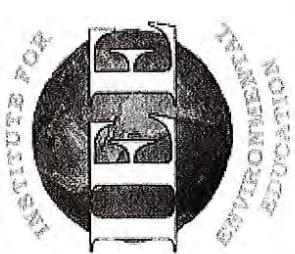
Name
ERIC J GITBERG

### License Information lookup

License Type	License Number	Expiration Date	Granted Date	License Name	License Status	Licensure Actions or Pending Charges
Asbestos Consultant-Inspector	984	03/31/2018	09/01/2017	ERIC J GITBERG	ACTIVE	None

Generated on: 2/22/2018 8:00:50 PM





*This is to certify that*  
**Eric J Gitberg**

*has completed the requisite training, and has passed an examination for accreditation*  
*as:*  
**Asbestos Inspector**

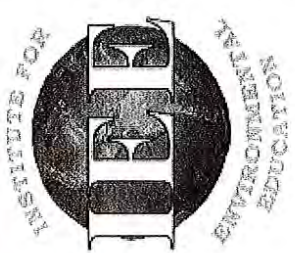
pursuant to Title II of the Toxic Substance Control Act, 15 U.S.C. 2646

**May 15-17, 2017**  
Course Dates  
**17-0301-102-401251**  
Certificate Number

**May 17, 2017**  
Examination Date  
**May 17, 2018**  
Expiration Date

**Course Location**  
Institute for Environmental Education, Inc.  
16 Upton Drive Wilmington, MA 01887

*Wentz*  
Training Director  
www.ieetrains.com



**INSTITUTE FOR ENVIRONMENTAL EDUCATION**

*State of Connecticut, Department of Public Health*  
*Approved Environmental Laboratory*

THIS IS TO CERTIFY THAT THE LABORATORY DESCRIBED BELOW HAS BEEN APPROVED BY THE STATE DEPARTMENT OF PUBLIC HEALTH PURSUANT TO APPLICABLE PROVISIONS OF THE PUBLIC HEALTH CODE AND GENERAL STATUTES OF CONNECTICUT, FOR MAKING THE EXAMINATIONS, DETERMINATIONS OR TESTS SPECIFIED BELOW WHICH HAVE BEEN AUTHORIZED IN WRITING BY THAT DEPARTMENT.

**TRC ENVIRONMENTAL CORPORATION**

LOCATED AT 21 Griffin Road North IN Windsor, CT 06095  
AND REGISTERED IN THE NAME OF Erik Plimpton

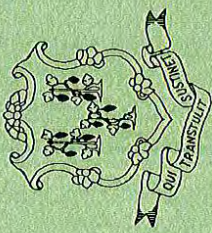
THIS CERTIFICATE IS ISSUED IN THE NAME OF Kathleen Williamson WHO HAS BEEN DESIGNATED BY THE REGISTERED OWNER/AUTHORIZED AGENT TO BE IN CHARGE OF THE LABORATORY WORK COVERED BY THIS CERTIFICATE OF APPROVAL AS FOLLOWS:

**BUILDING MATERIALS  
ASBESTOS FIBERS - PCM  
BULK IDENTIFICATION - PLM**

SEE COMPUTER PRINT-OUT FOR SPECIFIC TESTS APPROVED

EFFECTIVE RENEWAL DATE JANUARY 1, 2018  
THIS CERTIFICATE EXPIRES DECEMBER 31, 2019 AND IS REVOCABLE FOR CAUSE BY THE STATE DEPARTMENT OF PUBLIC HEALTH DATED AT HARTFORD, CONNECTICUT, THIS 19<sup>th</sup> DAY OF December, 2017

Registration No. PH-0426



*SUZANNE BLANCAFLOR, MS, MPH*  
CHIEF, ENVIRONMENTAL HEALTH SECTION

	<b>STATE OF CONNECTICUT</b> DEPARTMENT OF PUBLIC HEALTH ENVIRONMENTAL HEALTH SECTION	
<b>ENVIRONMENTAL LABORATORY CERTIFICATION PROGRAM</b> CERTIFIED ANALYTES REPORT FOR ALL MATRICES		
<b>TRC-Environmental Corporation</b> 21 GRIFFIN ROAD NORTH WINDSOR, CT 060951590		
CT REGISTRATION NUMBER : <input type="text" value="PH-0426"/>		
REGISTERED OWNER / AUTHORIZED AGENT : Erik Plimpton DIRECTOR : Kathleen Williamson CO DIRECTOR(S) : PHONE : (860) 298-9692		
LABORATORY REGISTRATION EFFECTIVE DATE : <input type="text" value="01/01/2018"/>		
LABORATORY REGISTRATION EXPIRATION DATE : <input type="text" value="12/31/2019"/>		
LABORATORY STATUS : <input type="text" value="APPROVED"/>		
APPROVED BY	 _____ SUZANNE BLANCAFLOR, MS, MPH CHIEF, ENVIRONMENTAL HEALTH SECTION	
REVIEWED BY	 _____ DERMOT JONES	12/19/2017 11:00:24 AM
ANY QUESTIONS CONCERNING THIS DOCUMENT SHOULD BE ADDRESSED TO THE ENVIRONMENTAL LABORATORY CERTIFICATION PROGRAM AT (860) 509-7389		

---

**CONSTRUCTION, RENOVATION & DEMO BLDG  
MATERIALS**

STATUS REPORTED ON 12/19/2017

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**ANALYTE NAME**

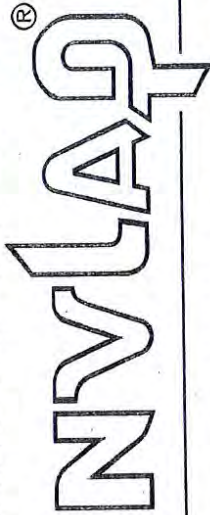
ASBESTOS

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ASBESTOS FIBERS (PCM)

ASBESTOS IN BULK MATERIALS (PLM)

United States Department of Commerce  
National Institute of Standards and Technology



## Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 101424-0

**TRC Environmental Corporation**  
Windsor, CT

is accredited by the National Voluntary Laboratory Accreditation Program for specific services,  
listed on the Scope of Accreditation, for:


### Asbestos Fiber Analysis

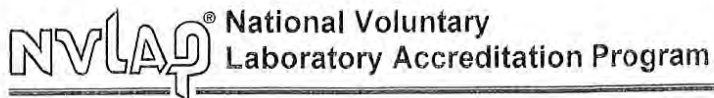
This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005.  
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality  
management system (refer to joint ISO-ILAC-IAF Communiqué dated January 2009).

2017-07-01 through 2018-06-30

Effective Dates



  
For the National Voluntary Laboratory Accreditation Program



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

TRC Environmental Corporation  
21 Griffin Road North  
Windsor, CT 06095  
Ms. Kathleen Williamson  
Phone: 860-298-6392 Fax: 860-298-6214  
Email: [kwilliamson@tresolutions.com](mailto:kwilliamson@tresolutions.com)  
<http://www.tresolutions.com>

ASBESTOS FIBER ANALYSIS

NVLAP LAB CODE 101424-0

Bulk Asbestos Analysis

<u>Code</u>	<u>Description</u>
18/A01	EPA -- Appendix E to Subpart E of Part 763 -- Interim Method of the Determination of Asbestos in Bulk Insulation Samples
18/A03	EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials

For the National Voluntary Laboratory Accreditation Program

Effective 2017-07-01 through 2018-06-30

Page 1 of 1

**APPENDIX C**

**ASBESTOS BULK SAMPLE CHAIN OF CUSTODY  
FORMS**









PLM Gravimetric Analysis

Date	Analyst	Lab Log #	Sample ID	Crucible ID	g crucible	g crucible plus sample	g after 480°	decimal Residue	% Asb in residue	% Asb total Sample
3/8/2018	KW	51993	20	22	22.047	22.2878	22.0512	0.017	0.00	0.00
			22	325	19.9917	20.3524	20.0657	0.205	0.00	0.00

51993.DCS Gravimetric.xls

3/8/2018

**APPENDIX D**  
**PLM LABORATORY ANALYSIS DATA**

Industrial Hygiene Laboratory  
 21 Griffin Road North  
 Windsor, CT 06095  
 (860) 298-6308



Page 1 of 2  
 51993.CT-DCS.doc

**BULK ASBESTOS ANALYSIS REPORT**

CLIENT: CT Department of Construction Services

Lab Log #: 0051993  
 Project #: 300279.0001.0000  
 Date Received: 03/08/2018  
 Date Analyzed: 03/08/2018

Site: 460-470 Capital Avenue, Hartford, CT

**POLARIZED LIGHT MICROSCOPY by EPA 600/R-93/116**

Sample No.	Color	Homogenous	Multi-Layered	Layer No.	Other Matrix Materials	Asbestos %	Asbestos Type
01	Black/Silver/Brown (asphalt shingle)	Yes	No	--	---	10%	Chrysotile
02	--	--	--	--	--	NA/PS	--
03	Black (flashing)	Yes	No	--	---	10%	Chrysotile
04	--	--	--	--	--	NA/PS	--
05	Black/Silver (flashing)	Yes	No	--	---	5%	Chrysotile
06	--	--	--	--	--	NA/PS	--
07	Black (flashing)	Yes	No	--	---	10%	Chrysotile
08	--	--	--	--	--	NA/PS	--
09	Black (flashing)	Yes	No	--	---	20%	Chrysotile
10	--	--	--	--	--	NA/PS	--
11	Black (flashing)	Yes	No	--	---	10%	Chrysotile
12	--	--	--	--	--	NA/PS	--
13	Black (flashing)	Yes	No	--	---	10%	Chrysotile
14	--	--	--	--	--	NA/PS	--
15	Black (flashing)	Yes	No	--	---	20%	Chrysotile
16	--	--	--	--	--	NA/PS	--
17	Black (flashing)	Yes	No	--	---	10%	Chrysotile

**TRC LABORATORY ASBESTOS ANALYTICAL ACCREDITATIONS**

NVLAP Lab Code 101424-0 AIHA-LAP, LLC #100122 CT #PH-0426 ME LA-0075, LB-0071 MA #AA000052 NY #10980 WY# L1T000411  
 RI #AAL-007 TX #300354 VT #AL014538 LA#05011 VA #3333 000283 AZ #A20944 HI #L-09-004 NJ #CT004 CA #2907  
 CO# AL-15020 PHIL# 461 PA#68-03387

Industrial Hygiene Laboratory  
 21 Griffin Road North  
 Windsor, CT 06095  
 (860) 298-6308



Page 2 of 2  
 51993.CT-DCS.doc

**POLARIZED LIGHT MICROSCOPY by EPA 600/R-93/116**

Sample No.	Color	Homogenous	Multi-Layered	Layer No.	Other Matrix Materials	Asbestos %	Asbestos Type
18	--	--	--	--	--	NA/PS	--
19	Black (roofing tar)	Yes	No	--	---	ND	None
20♣	Black (roofing tar)	Yes	No	--	---	ND	None
21	Black (built up tar)	Yes	No	--	30% cellulose	ND	None
22♣	Black (built up tar)	Yes	No	--	---	ND	None

♣Samples analyzed by EPA/600/R-93/116 with gravimetric reduction

Reporting limit- asbestos present at 1%

ND - asbestos was not detected

Trace - asbestos was observed at level of less than 1%

NA/PS - Not Analyzed / Positive Stop

SNA- Sample Not Analyzed- See Chain of Custody for details

Note: Polarized-light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. In those cases, EPA recommends, and certain states (e.g. NY) require, that negative results be confirmed by quantitative transmission electron microscopy.

The Laboratory at TRC follows the EPA's Interim Method for the Determination of Asbestos in Bulk Insulation 1982 (EPA 600/M4-82-020) Bulk Analysis Code 18/A01 and the EPA recommended Method for the Determination of Asbestos in Bulk Building Materials July 1993, R.L. Perkins and B.W. Harvey, (EPA/600/R-93/116) Bulk Analysis Code 18/A03, which utilize polarized light microscopy (PLM). Our analysts have completed an accredited course in asbestos identification. TRC's Laboratory is accredited under the National Voluntary Laboratory Accreditation Program (NVLAP), for Bulk Asbestos Fiber Analysis, NVLAP Code 18/A01, effective through June 30, 2018. TRC is accredited by the AIHA Laboratory Accreditation Programs (AIHA-LAP), LLC in the Industrial Hygiene Program (IHLAP) for PLM effective through October 1, 2018. Asbestos content is determined by visual estimate unless otherwise indicated. Quality Control is performed in-house on at least 10% of samples and QC data related to the samples is available upon written request from client.

This report shall not be reproduced, except in full, without the written approval of TRC. This report must not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report relates only to the items tested.

Analyzed by: K. Williamson  
 Kathleen Williamson, Laboratory Manager

Reviewed by: Cathryn Lemire  
 Cathryn Lemire, Approved Signatory

Date Issued  
 03/12/2018

TRC LABORATORY ASBESTOS ANALYTICAL ACCREDITATIONS

NVLAP Lab Code 101424-0 AIHA-LAP,LLC #100122 CT #PH-0426 ME LA-0075, LB-0071 MA #AA000052 NY #10980 WV# LT000411  
 RI #AAL-007 TX #300354 VT #AL014538 LA#05011 VA #3333 000283 AZ #A20944 HI #I-09-004 NJ #CT004 CA #2907  
 CO# AL-15020 PHIL# 461 PA#68-03387

**APPENDIX E**  
**RELATED CORRESPONDENCE**

**Lepage, Don**

**From:** Marc A. Loranger <mal@gainc.com>  
**Sent:** Friday, March 02, 2018 3:32 PM  
**To:** Lepage, Don; Wilfinger, Ronald  
**Cc:** dscully@rmbrooklyn.com; Versteeg, Kerri; Elliott T. Hambrook; Terrell, Richard  
**Subject:** RE: BI-2B-433 - 460/470 Capitol Ave Roof Replacement  
**Attachments:** BI-2B-433\_976820 - A100s A101 (1).pdf

Don,

Attached is the Overall Roof Plan for your use.

The pitched roofs were just installed approximately 5 years ago and should not require sampling, however the flashing membrane on the slope should be tested as we will be tying into the sloped asphalt shingle roof areas.

Authorization for schedule and time shall be by DCS and RM Bradley.

Marc A. Loranger, PE, LEED AP  
P | 860 430 5660 F | 860 430 9072



**From:** Lepage, Don [mailto:DLepage@trcsolutions.com]  
**Sent:** Friday, March 02, 2018 3:12 PM  
**To:** Wilfinger, Ronald <Ronald.Wilfinger@ct.gov>  
**Cc:** dscully@rmbrooklyn.com; Versteeg, Kerri <Kerri.Versteeg@ct.gov>; 2B433, DAS <DAS.2B433@ct.gov>; Marc A. Loranger <mal@gainc.com>; Elliott T. Hambrook <eth@gainc.com>; Terrell, Richard <Richard.Terrell@ct.gov>  
**Subject:** RE: BI-2B-433 - 460/470 Capitol Ave Roof Replacement

Our roofer is available Tuesday 3/6 at 8 am to take the roof cuts and patch for the asbestos survey of the 460-470 Capital Ave roof.

Please confirm that we can go ahead and schedule this survey for Tuesday. Is there access to the roof via roof hatch or will we need a ladder?

Marc— can you send me a clean version of the roof plan that I can use for my survey to put in with the report.



Just to confirm – we are only sampling the flat roofs and not the pitched roofs with asphalt shingles.

Donnelly  
Ronald Lepage  
Project Manager  
Building Science Division



11 South Road North  
Windsor, CT 06095  
(860) 999-0222 phone  
(860) 999-6300 fax  
(860) 999-9142 cell  
[dlepage@trcsolutions.com](mailto:dlepage@trcsolutions.com)

**From:** Wilfinger, Ronald [mailto:[Ronald.Wilfinger@ct.gov](mailto:Ronald.Wilfinger@ct.gov)]

**Sent:** Thursday, March 01, 2018 7:25 AM

**To:** Lepage, Don <[DLepage@trcsolutions.com](mailto:DLepage@trcsolutions.com)>

**Cc:** [dscully@rbradley.com](mailto:dscully@rbradley.com); Versteeg, Kerri <[Kerri.Versteeg@ct.gov](mailto:Kerri.Versteeg@ct.gov)>; 2B433, DAS <[DAS.2B433@ct.gov](mailto:DAS.2B433@ct.gov)>; Marc A. Loranger <[mal@gainc.com](mailto:mal@gainc.com)>; Elliott T.

Hambrook <[eth@gainc.com](mailto:eth@gainc.com)>; Terrell, Richard <[Richard.Terrell@ct.gov](mailto:Richard.Terrell@ct.gov)>

**Subject:** BI-2B-433 - 460/470 Capitol Ave Roof Replacement

Don,

Please find the attached Form 1165, TRC Quote and The Consultants Map of Roof Cuts to verify the Roof type and substrate for their design.

I also received some other information that maybe useful to TRC form a report in 1999 and have attached as well (Thanks to Facilities for providing this info)

I left you a voice mail yesterday and am following up with this e-mail

I would like TRC to schedule as expeditiously as possible the work for sampling and Test Result Reporting for the above referenced project IAW the Form 1165, your on-call contract and proposal dated 21SEP17.

Schematic Design is slotted to be complete by the first week in April and would be greatly appreciated if this can be accomplished before then.

If there are any questions/concerns please do not hesitate to contact me.

Thank You for your time and patience in this matter


*Ronald J Wiifinger*  
Associate Project Manager  
DAS/Division of Construction Services  
450 Columbus Blvd, Suite 1201  
Hartford, CT 06103  
O - (860) 713-5648  
C - (860) 422-5306  
Right Fax: (860) 707 - 1932

**End of Section 50 30 00 Hazardous Building Materials Inspection and Inventory**

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# **Section 50 60 00 FM Global Checklist for Roofing Systems**

**SAMPLE FM GLOBAL CHECKLIST FOR ROOFING SYSTEMS – page 1**



### CHECKLIST FOR ROOFING SYSTEM

<b>CONTACT INFORMATION:</b>		<b>INDEX NUMBER:</b>	
ROOFING CONTRACTOR (NAME & ADDRESS)		TELEPHONE NO.:	FAX:
		E-MAIL ADDRESS:	CONTACT:
CLIENT (NAME & ADDRESS)		TELEPHONE NO.:	FAX:
		E-MAIL ADDRESS:	CONTACT:

**OVERVIEW OF WORK:** *(Submit 1 form per roof area)*

Building Name & Number:			
Building Dimensions: Length:	ft/m;	Width:	ft/m;
		Height	ft/m.
Roof Slope:			
Parapet Height ,max (in./m):		Parapet Height ,min (in./m):	
Type of Work: <input type="checkbox"/> New Construction <input type="checkbox"/> Recover (New roof over existing Roofing System)			
<input type="checkbox"/> Reroof (New cover/remove existing roofing system to deck) <input type="checkbox"/> Other			
FM Approved RoofNav Assembly Numbers:			

**ROOF SURFACING:**

<input type="checkbox"/> None	
<input type="checkbox"/> Coating	<i>(Trade Name/Application Rate)</i>
<input type="checkbox"/> Granules	<i>(Application Rate)</i>
<input type="checkbox"/> Gravel/Slag	<i>(Application Rate)</i>
Ballast: <input type="checkbox"/> Stone Size	<input type="checkbox"/> Pavers <i>(Beveled or square edge);</i> <input type="checkbox"/> Other:
Ballast Weight (psf): Field:	Perimeter: Corners:

**ROOF COVER/MEMBRANE:**  
*(Please provide ALL applicable details including trade name, type, number of plies, thickness, reinforced, adhesive)*

<input type="checkbox"/> Panel:	<input type="checkbox"/> Through Fastened Metal
	<input type="checkbox"/> Standing Seam metal
	<input type="checkbox"/> Fiber Reinforced Plastic (FRP)
	<input type="checkbox"/> Other:
<input type="checkbox"/> Built Up Roofing (BUR)	
<input type="checkbox"/> Modified Bitumen	
<input type="checkbox"/> Single Ply:	<input type="checkbox"/> Adhered <input type="checkbox"/> Fastened <input type="checkbox"/> Ballasted
<input type="checkbox"/> Spray Applied	
<input type="checkbox"/> Other:	

**BASE SHEET:**  
*(Please include Trade Name, Type, and Width)*

<input type="checkbox"/> None	
Trade Name:	Width: <input type="checkbox"/> 36 in. <input type="checkbox"/> 1 meter (39 in.)
<input type="checkbox"/> Fastened	<input type="checkbox"/> Adhered
<input type="checkbox"/> Secured per RoofNav	OR <input type="checkbox"/> Per FM Global Loss Prevention Data Sheet 1-29
Comments:	
<input type="checkbox"/> Air Retarder	
<input type="checkbox"/> Vapor Retarder	


**INSULATION**

Layer	Trade Name	Thickness (In.)	Fastened	Adhered	Tapered
1. Top			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Next			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Next			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Next			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<input type="checkbox"/> Glass Fiber/Mineral Wool/Batt	<input type="checkbox"/> Facer Type/Vapor Barrier
<input type="checkbox"/> Thermal Barrier	

X2688 ENGINEERING (Rev. January 2011)

**SAMPLE FM GLOBAL CHECKLIST FOR ROOFING SYSTEMS – page 2**

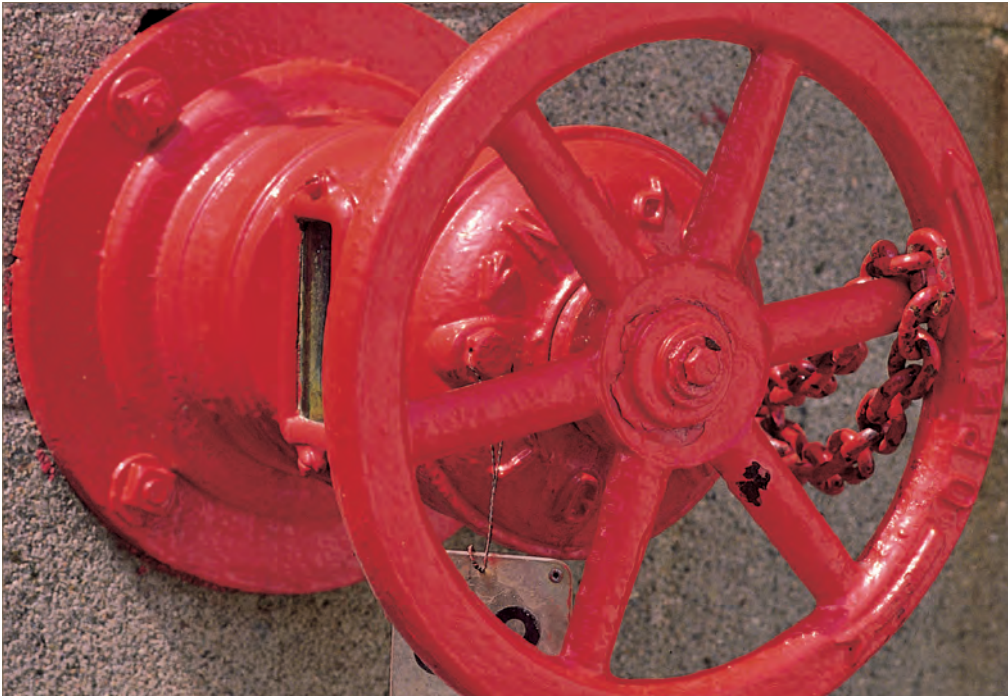
<b>CHECKLIST FOR ROOFING SYSTEM</b>		
<input type="checkbox"/> Other:		
<input type="checkbox"/> None		
<b>DECK:</b> <i>(Please include manufacturer, type, yield strength, thickness/gage, etc.)</i>		
<input type="checkbox"/> Steel:		
<input type="checkbox"/> LWIC (Form Deck):		<input type="checkbox"/> Cementitious Wood Fiber:
<input type="checkbox"/> Concrete: <input type="checkbox"/> Pre-cast panels or <input type="checkbox"/> Cast in Place		
<input type="checkbox"/> Wood		
<input type="checkbox"/> Fiber Reinforced Cement		<input type="checkbox"/> Fiber Reinforced Plastic
<input type="checkbox"/> Gypsum: <input type="checkbox"/> Plank		<input type="checkbox"/> Poured
<input type="checkbox"/> Other:		
Comments:		
<b>ROOF STRUCTURE (Include Size, Gage, Etc.):</b>		
<input type="checkbox"/> Purlins <input type="checkbox"/> "C" OR <input type="checkbox"/> "Z"		
<input type="checkbox"/> Joists <input type="checkbox"/> Wood OR <input type="checkbox"/> Steel		
<input type="checkbox"/> Beams <input type="checkbox"/> Wood OR <input type="checkbox"/> Steel		
<input type="checkbox"/> Other:		
Spacing: Field:	Perimeter:	Corners:
Comments:		
<b>FASTENERS USED IN ROOF ASSEMBLY:</b>		
<b>Roof Cover Fasteners:</b> Trade Name:		Length:
Diameter:		
Stress Plate/Batten:		
Spacing: Field: <input checked="" type="checkbox"/>	Perimeter: <input checked="" type="checkbox"/>	Corners: <input checked="" type="checkbox"/>
<b>Insulation Fasteners:</b> Trade Name:		Type:
Size:		Stress Plate:
Spacing: Field:	Perimeter:	Corners:
<b>Deck Or Roof Panels Fasteners:</b>		Type:
Trade Name:		Size Washer:
Length:		
If Weld: Size:	Weld:	Washer:
Deck Side Lap Fasteners: Field: <input checked="" type="checkbox"/>	Perimeter: <input checked="" type="checkbox"/>	Corners: <input checked="" type="checkbox"/>
Spacing: Field: <input checked="" type="checkbox"/>	Perimeter: <input checked="" type="checkbox"/>	Corners: <input checked="" type="checkbox"/>
<b>Base Sheet Fasteners</b>		
Trade Name:		Type:
Head Diameter:		Length:
Spacing: (Attached Sketches as necessary)		
Spacing Along Laps: Field:	Perimeter:	Corners:
No. Intermediate Rows: Field:	Perimeter:	Corners:
Spacing Along Intermediate Rows: Field:	Perimeter:	Corners:
<b>PERIMETER FLASHING:</b> <i>(Attach a detailed sketch of metal fascia, gravel stop, nailer, coping, etc.)</i>		
<input type="checkbox"/> FM Approved Flashing		<input type="checkbox"/> Per FM Global Loss Prevention Data Sheet 1-49
<input type="checkbox"/> Other:		Comments:
<b>DRAINAGE:</b>		
For new construction: Has roof drainage been designed by a Qualified Engineer per FM Global Loss Prevention Data Sheet 1-54 and the local building code? <input type="checkbox"/> Yes <input type="checkbox"/> No (Attach details)		
For re-roofing and recovering: will the roof drainage be changed from the original design (for example: drain inserts, drains covered or removed, new expansion joints, blocked or reduced scupper size)? <input type="checkbox"/> Yes <input type="checkbox"/> No		
If yes, were the changes reviewed by a Qualified Engineer? <input type="checkbox"/> Yes <input type="checkbox"/> No (Attach details)		
Is secondary (emergency) roof drainage provided per FM Global Data Sheet 1-54? <input type="checkbox"/> Yes <input type="checkbox"/> No (Attach details)		
X2688 ENGINEERING (Rev. January 2011)		





# **Section 50 70 00**

# **FM Global Red Tag System**



## Managing Fire Protection System Impairment





The following guidelines require the use of FM Global's *Red Tag Permit System Wall Hanger (P7427)*, which includes:

- One copy of this brochure
- One sheet of *Fire Protection Equipment Decals (P7834)* to affix to fire protection equipment as a reminder that authorization is needed before any shutdown can occur
- One 12.5 x 13.25-in. (31.75 x 33.66-cm) wall hanger with pockets to keep other elements of the system organized and within reach; also lists steps to take before, during and after an impairment
- Four *Red Tag Permits (F2480)* to authorize impairments and document tasks as they are performed
- One *Reusable Impairment Tag for Fire Service Connections (P7427t)* to wire to fire service connections as a reminder that fire protection is out of service.

Be sure to familiarize personnel with this system as soon as possible before planning your next fire protection system impairment. Display the wall hanger where it is clearly visible and alert personnel to its location. Educate staff about all procedures and let them know who is assigned to authorize an impairment.

## Red Tag Permit System



A. Red Tag Permit (F2480)

B. Fire Protection Equipment Decals (P7834)

C. Reusable Impairment Tag for Fire Service Connections (P7427t)



D. Red Tag Permit System Wall Hanger (P7427)

### Before a Planned Impairment

- Complete all applicable sections of the permit (see page 5), providing key information, such as telephone numbers for your local fire service, alarm company, water department, and FM Global office servicing your property.
- Affix the red-and-white Fire Protection Equipment Decals to all protection equipment to remind personnel that authorization is needed before any shutdown can occur.
- Plan to work on fire protection when the facility is not operating. Shut down any hazardous processes.
- Prohibit any process with an inherent ignition source, such as hot work. Smoking also should be prohibited.
- Be prepared. Have everything ready before impairing protection, e.g., excavating equipment, pipe plugs, repair parts and personnel.
- Plan to have temporary fire protection on hand: extra extinguishers, charged hose lines, temporary sprinkler protection, etc.
- Set up temporary sprinkler protection, especially for prolonged impairments, by running a 2.5-in. (65-mm) hose from the hydrant to the 2-in. (50-mm) drain of an active system (you will need an adapter to connect the hose to the drain).
- Notify your emergency response team (ERT) and the public fire service so they can be ready to handle any emergency that might occur.
- If fire protection equipment can be restored, determine how to quickly return it to service in case a fire occurs during the impairment.
- Assign a fire watch to patrol the area where protection is impaired.
- Notify your local FM Global office of the planned impairment. (For the FM Global office closest to you, visit our Web site at [fmglobal.com/contact](http://fmglobal.com/contact).)



An engineer and/or client service representative can advise you on how to proceed and follow up until protection has been restored. In addition, he or she can help minimize downtime, if possible, reduce fire exposure to the area, arrange for temporary protection, and determine how to restore protection as quickly as possible in the event of a fire.

Managing Fire Protection System Impairment 4 of 8

## Completing the Red Tag Permit

The precautions listed at the top of all three parts will help you and your FM Global engineer determine the specific actions you need to take. The information provided in Part 1 transfers to Parts 2 and 3.

### Part 1 – Red Tag Permit

This section becomes a record of the impairment. The firesafety supervisor completes, signs and issues the permit, describing the location of the facility and reason for impairment, and then:

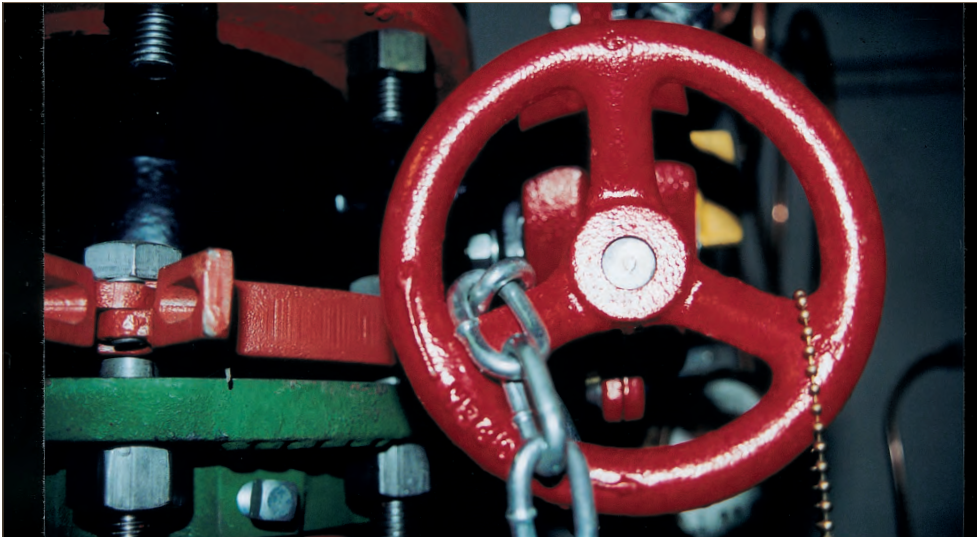
1. Phones or faxes the same information to FM Global (FM Global telephone and fax numbers are included on the wall hanger); and
2. Signs the permit to document that the impairment has been planned or is underway.

### Part 2 – Out of Service

Place Part 2 in the center pocket of the wall hanger as a reminder of the impairment.

### Part 3 – Fire Protection Out of Service

Issue Part 3 to the fire protection equipment operator, who then documents each step in the impairment and return-to-full-operation processes, and attaches Part 3 to the shut valve. Be sure he or she carefully records the date, time, type of valve and the number of turns needed to close it.



### Authorizing the Impairment

- Inform employees that the *Red Tag Permit System* is in effect. It's best if the wall hanger is displayed in plain view so that the firesafety supervisor or appropriate personnel can easily follow the procedures listed on the poster and permit.
- Use the three-part *Red Tag Permit* to initiate the impairment and identify affected equipment. Complete the permit, following each step carefully.

### Restoring the System

- Promptly restore fire protection equipment to automatic service as soon as possible.
- If sprinkler protection was impaired, conduct a 2-in. (50-mm) drain test at the sprinkler riser to obtain a clear, unobstructed water flow.

- Lock sprinkler control valves in the wide-open position.
- Reset the alarm system; notify the central station, if applicable.
- Notify your ERT, public fire service and FM Global representative that fire protection has been restored.
- Complete the Red Tag Permit. The fire protection equipment operator documents all steps taken to restore fire protection in Part 3 of the permit, signs it and returns it to the firesafety supervisor. The firesafety supervisor:
  - Reviews the information on the signed permit and retains it as a record of the impairment; and
  - Transfers information from Part 3 of the permit to Part 2, and phones or faxes the information in Part 2 to FM Global.

### Managing Unplanned Impairments

The steps outlined on the previous pages work well for planned fire protection impairments; however, not all impairments can be planned. Suppose sprinkler piping starts leaking or freezing causes pipes to break? Suddenly, you're faced with an unplanned impairment and the steps you take to manage the situation could mean the difference between minor damage and a significant loss. To ensure safe handling of the impairment:

- Stabilize the situation and immediately follow the precautions outlined in "Before a Planned Impairment" on page 4.
- If a fire starts, make sure sprinkler valves are opened immediately.
- If it is safe to do so, immediately dispatch the sprinkler valve operator(s) to the valve(s) controlling the fire area; the valve operator's job is to:

Managing Fire Protection System Impairment 6 of 8

- Guard the valve against premature shutting;
- Unlock the valve, test it to make sure it is open, and then relock it;
- Stand by the valve during the fire and close it only at the direction of the fire chief;
- Stand by the valve after the fire until sprinklers have been replaced—doing so will allow you to restore the system quickly if the fire reignites; and
- Reopen valve(s), conduct drain test(s) and lock the valve(s) wide open.

*Remember:* If someone forgets to reopen an impaired fire protection valve and a fire breaks out, the result could be a devastating loss to your company and its assets, regardless of whether or not attempts are made to immediately reopen the valve or extinguish the flames.

## Additional Resources

For additional information on managing impairments, refer to FM Global's online Resource Catalog available at [fmglobalcatalog.com](http://fmglobalcatalog.com). There, you will find educational material offered in a wide variety of languages and formats, including information on FM Global's online training courses developed exclusively for our clients. Of particular interest will be *Managing Impairments Using FM Global's Red Tag Permit System*, which provides instruction on impairments to fire protection equipment/systems and how to use FM Global's *Red Tag Permit System* to properly manage those impairments. Available exclusively to FM Global clients, the course takes less than one hour to complete.



Managing Fire Protection System Impairment 7 of 8



 <p>P9006 © 2007 FM Global (Rev 08/2016) All rights reserved. fmglobal.com</p> <p>FM Insurance Company Limited 1 Windsor Dials, Windsor, Berkshire, SL4 1RS Authorized by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority.</p>	<p><b>Contact Us:</b> To report an impairment or to find an FM Global office nearest you, visit <a href="http://fmglobal.com/contact">fmglobal.com/contact</a>.</p> <p><b>Report a Loss:</b> Dial (1)877 NEW LOSS (639 5677)* to report a property or cargo loss 24 hours a day, seven days a week. Or, to contact your client service team or designated claims office directly, go to <a href="http://fmglobal.com/claims">fmglobal.com/claims</a> or <a href="http://affiliatedfm.com/claims">affiliatedfm.com/claims</a> for location and contact information.</p> <p>*For clients of FM Global and AFM in Canada and the United States only.</p>	<p><b>Product Ordering Information:</b> For additional copies of this publication or other FM Global resources, order online 24 hours a day, seven days a week at <a href="http://fmglobalcatalog.com">fmglobalcatalog.com</a>.</p> <p>Or, for personal assistance worldwide, contact our U.S.-based customer services team, Monday – Friday, 8 a.m. – 5 p.m. ET:</p> <ul style="list-style-type: none"><li>▪ Toll-free: (1)877 364 6726 (Canada and the United States)</li><li>▪ Phone: +1 (1)401 477 7744</li><li>▪ Fax: +1 (1)401 477 7010</li><li>▪ Email: <a href="mailto:customerservices@fmglobal.com">customerservices@fmglobal.com</a></li></ul>

# HOT WORK PERMIT

**STOP!**  
 Avoid hot work when possible! Consider using an alternative cold work method.

This Hot Work Permit is required for any temporary operation involving open flames or producing heat and/or sparks conducted outside a Hot Work Designated Area. This includes, but is not limited to: brazing, cutting, grinding, soldering, torch-applied roofing and welding.

Instructions for Permit Authorizer		Part 1	Required Precautions
<ol style="list-style-type: none"> <li>Specify the precautions to take.</li> <li>Fill out and keep <b>Part 1</b> during the hot work process.</li> <li>Issue <b>Part 2</b> to the person doing the job.</li> <li>Keep <b>Part 2</b> on file for future reference, including signed confirmation that the post-work fire watch and monitoring have been completed.</li> <li>Sign off the final check on <b>Part 2</b>.</li> </ol>		<p><b>Y. NA</b></p> <input type="checkbox"/> The fire pump is in operation and switched to automatic. <input type="checkbox"/> Control valves to water supply for sprinkler system are open. <input type="checkbox"/> Extinguishers are in service/operable. <input type="checkbox"/> Hot work equipment is in good working condition.	<div style="border: 1px solid black; width: 100%; height: 100%;"></div>
HOT WORK BY <input type="checkbox"/> Employee _____ <input type="checkbox"/> Contractor _____		<p><b>Requirements within 35 ft. (10 m) of hot work</b></p> <input type="checkbox"/> Shield combustible construction using listed (e.g., FM Approved) welding pads, blankets and curtains. <input type="checkbox"/> Remove or shield nonremovable combustibles using listed (e.g., FM Approved) welding pads, blankets and curtains. <input type="checkbox"/> Isolate potential sources of flammable gas, ignitable liquid or combustible dust/lint (e.g., shut down equipment). <input type="checkbox"/> Remove ignitable liquid, combustible dust/lint and combustible residues. <input type="checkbox"/> Shut down ventilation and conveying systems.	
DATE _____	JOB NUMBER _____	<input type="checkbox"/> Shut down ventilation and conveying systems. <input type="checkbox"/> Remove combustibles and consider a second fire watch on opposite side of floor, wall, ceiling or roof when openings exist or thermally conductive materials pass through. <input type="checkbox"/> Is work on a combustible building assembly (e.g., Torch-Applied Roofing)? If yes, provide <b>ADDITIONAL REQUIRED PRECAUTIONS</b> below.	
LOCATION OF WORK (BUILDING/FLOOR/OBJECT) _____		<p><b>Hot work on/in closed equipment, ductwork or piping</b></p> <input type="checkbox"/> Isolate equipment from service. <input type="checkbox"/> Remove ignitable liquid and purge flammable gas/vapor. <input type="checkbox"/> Prior to work, and/or during work, monitor for flammable gas/vapor. LEL readings(s): _____ <input type="checkbox"/> Remove combustible dust/lint or other combustible materials. <input type="checkbox"/> Is work on/in equipment with nonremovable combustible linings or parts? If yes, provide <b>ADDITIONAL REQUIRED PRECAUTIONS</b> below.	
WORK TO BE PERFORMED _____		<p><b>Fire watch/fire monitoring the hot work area</b></p> Times listed are sufficient for majority. Use Table at back of permit for guidance for combustible concealed cavities, roof work or favorable factors. <input type="checkbox"/> Perform a continuous fire watch during hot work. <input type="checkbox"/> Perform a continuous fire watch post-work for _____ hours. <input type="checkbox"/> Perform fire monitoring for _____ hours or Other _____ hours.	
NAME OF PERSON PERFORMING HOT WORK _____		<p><b>ADDITIONAL REQUIRED PRECAUTIONS:</b></p> _____ _____ _____ _____	
NAME OF PERSON PERFORMING FIRE WATCH _____			
<p><b>I verify the above location has been examined, the Required Precautions have been taken, and permission is authorized for this work.</b></p> PERMIT AUTHORIZER (PRINT AND SIGN) _____			
<p><b>THIS PERMIT EXPIRES ON (LIMIT AUTHORIZATION TO ONE SHIFT):</b></p> DATE: _____ TIME: _____ AM/PM			
<p><b>Note:</b> Emergency notification on back of form.</p> <p><b>Additional FM Global Resources:</b>                      Property Loss Prevention Data Sheet 10-3, <i>Hot Work Management</i>                      Hot Work Permit App via <a href="http://fmglobal.com/apps">fmglobal.com/apps</a>                      Hot Work Permit form (F2630) via <a href="http://fmglobalcatalog.com">fmglobalcatalog.com</a>                      Online training at <a href="http://training.fmglobal.com">training.fmglobal.com</a>                      FM Approved equipment via <a href="http://fmaprovals.com">fmaprovals.com</a></p>			



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# WARNING

## HOT WORK IN PROGRESS! Watch for fire!

Instructions		Part 2	Required Precautions
<p><b>Person performing hot work:</b> Record time started and display permit at hot work area. After hot work is completed, record time and leave permit displayed for fire watch.</p> <p><b>Fire watch:</b> Watch area during hot work and after work completion. Prior to leaving area, perform final inspection, sign, leave permit displayed and notify Fire Monitor or Permit Authorizer.</p> <p><b>Fire Monitor:</b> Monitor area after post-work fire watch completion. Perform final inspection, sign and return to Permit Authorizer.</p>		<p><b>Y. NA</b></p> <p><input type="checkbox"/> The fire pump is in operation and switched to automatic.</p> <p><input type="checkbox"/> Control valves to water supply for sprinkler system are open.</p> <p><input type="checkbox"/> Extinguishers are in service/operable.</p> <p><input type="checkbox"/> Hot work equipment is in good working condition.</p>	
<p><b>HOT WORK BY</b></p> <p><input type="checkbox"/> Employee _____</p> <p><input type="checkbox"/> Contractor _____</p>		<p><b>Requirements within 35 ft. (10 m) of hot work</b></p> <p><input type="checkbox"/> Shield combustible construction using listed (e.g., FM Approved) welding pads, blankets and curtains.</p> <p><input type="checkbox"/> Remove or shield nonremovable combustibles using listed (e.g., FM Approved) welding pads, blankets and curtains.</p> <p><input type="checkbox"/> Isolate potential sources of flammable gas, ignitable liquid or combustible dust/lint (e.g., shut down equipment).</p>	
DATE _____	JOB NUMBER _____	<p><input type="checkbox"/> Remove ignitable liquid, combustible dust/lint and combustible residues.</p> <p><input type="checkbox"/> Shut down ventilation and conveying systems.</p>	
LOCATION OF WORK (BUILDING/FLOOR/OBJECT) _____		<p><input type="checkbox"/> Remove combustibles and consider a second fire watch on opposite side of floor, wall, ceiling or roof when openings exist or thermally conductive materials pass through.</p>	
WORK TO BE PERFORMED _____		<p><input type="checkbox"/> Is work on a combustible building assembly (e.g., Torch-Applied Roofing)? If yes, provide <b>ADDITIONAL REQUIRED PRECAUTIONS</b> below.</p>	
NAME OF PERSON PERFORMING HOT WORK _____		<p><b>Hot work on/in closed equipment, ductwork or piping</b></p> <p><input type="checkbox"/> Isolate equipment from service.</p> <p><input type="checkbox"/> Remove ignitable liquid and purge flammable gas/vapor.</p> <p><input type="checkbox"/> Prior to work, and/or during work, monitor for flammable gas/vapor. LEL readings(s): _____</p>	
NAME OF PERSON PERFORMING FIRE WATCH _____		<p><input type="checkbox"/> Remove combustible dust/lint or other combustible materials.</p> <p><input type="checkbox"/> Is work on/in equipment with nonremovable combustible linings or parts? If yes, provide <b>ADDITIONAL REQUIRED PRECAUTIONS</b> below.</p>	
<p><b>I verify the above location has been examined, the Required Precautions have been taken, and permission is authorized for this work.</b></p> <p>PERMIT AUTHORIZER (PRINT AND SIGN) _____</p>		<p><b>Fire watch/fire monitoring the hot work area</b></p> <p>Times listed are sufficient for majority. Use Table at back of permit for guidance for combustible concealed cavities, roof work or favorable factors.</p> <p><input type="checkbox"/> Perform a continuous fire watch during hot work.</p> <p><input type="checkbox"/> Perform a continuous fire watch post-work for _____ hours.</p> <p><input type="checkbox"/> Perform fire monitoring for _____ hours or Other _____ hours.</p>	
<p><b>THIS PERMIT EXPIRES ON (LIMIT AUTHORIZATION TO ONE SHIFT):</b></p> <p>DATE: _____ TIME: _____ AM/PM _____</p>		<p><input type="checkbox"/> Perform a continuous fire watch during hot work.</p> <p><input type="checkbox"/> Perform a continuous fire watch post-work for _____ hours.</p> <p><input type="checkbox"/> Perform fire monitoring for _____ hours or Other _____ hours.</p>	
Hot Work Date: _____	Start Time: _____ am/pm		
	Finish Time: _____ am/pm		
Post-Work Fire Watch _____	Finish Time: _____ am/pm		
Name _____			
Fire Monitor <input type="checkbox"/> Person <input type="checkbox"/> Other _____	Finish Time: _____ am/pm		
Name/Other _____			
Final Check _____	Time: _____ am/pm		
Name _____			
F2630 © 2018 FM Global. (Rev. 01/2018) All rights reserved.		<p><b>ADDITIONAL REQUIRED PRECAUTIONS:</b></p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	

# WARNING

**HOT WORK IN PROGRESS!**

**Watch for fire!**

In case of emergency, call the contacts listed below before attempting to extinguish the fire.

Contact	Number

## Construction and Occupancy Factors for Post-Work Fire Watch and Monitoring Periods

	Construction Factors						
	Noncombustible construction, or FM Approved Class 1 or Class A building materials		Combustible construction without concealed cavities		Combustible construction with unprotected concealed cavities		
	Watch	Monitor	Watch	Monitor	Watch	Monitor	
<b>Occupancy Factors</b>	Noncombustible with any combustibles contained within closed equipment (e.g., ignitable liquid within piping)	30 minutes	0 hours	1 hour	3 hours	1 hour	5 hours
	Office, retail or manufacturing with limited combustible loading	1 hour	1 hour	1 hour	3 hours	1 hour	5 hours
	Manufacturing with moderate to significant combustible loading except as noted below	1 hour	2 hours	1 hour	3 hours	1 hour	5 hours
	Warehousing	1 hour	2 hours	1 hour	3 hours	1 hour	5 hours
	<b>Exceptions:</b> Occupancies with processing or having bulk storage of combustible materials capable of supporting slow-growing fires (e.g., paper, pulp, textile fibers, wood, bark, grain, coal or charcoal)	1 hour	3 hours	1 hour	3 hours	1 hour	5 hours

When performing torch-applied roofing, apply additional precautions and conduct a minimum 2 hours fire watch and 2 hours fire monitoring. If an infrared camera is utilized, reduce to a 1 hour fire watch and 1 hour fire monitoring.

When performing hot work on/in equipment containing nonremovable combustible linings or parts, apply additional precautions and conduct a minimum 1 hour fire watch and 3 hours fire monitoring within the equipment, and in the surrounding areas per Table above.



# Guide to Hot Work Loss Prevention

Sixth Edition



## Guide to Hot Work Loss Prevention Sixth Edition

### Audience

This guide is intended for those involved with hot work management at client facilities. This includes FM Global clients and contractors hired by clients to perform hot work at their properties.

### Terminology

Hot work is any operation involving open flames or producing heat or sparks, including welding, brazing, soldering, torch or radial saw cutting, grinding and torch-applied roofing.

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## Introduction

Sensible precautions—that's all it takes to prevent a hot work fire or explosion. Yet, every year, hot work is among the top causes of fires and explosions at FM Global client facilities.

The goal of every hot work program should be to prevent hot work ignition sources from coming into contact with combustible and flammable material. When such a program is conducted properly, hot work incidents can be prevented.

All hot work fires and explosions are directly linked to lack of supervision.

People in general don't believe preventable accidents will happen to them. They may think hot work safety precautions are unnecessary extras, or someone else's job—both of which are quite untrue. Anyone who spends time in a hot work environment should consider safety a primary responsibility.

Unfortunately, hot work fires and explosions can cause devastating losses to facilities, businesses and people. All it takes is one relaxed or ignored procedure, or a general lack of awareness of a hazard. The absence of good work practices and/or lack of proper training of employees and contractors on the hazard associated with performing hot work may be costly to your business. In fact, contractors are often left unsupervised, when they should be under constant watch. This is particularly important because the trend toward outsourcing creates more opportunities for contractors (who are not experts or may have knowledge of your specific fire hazards including combustible construction or occupancy contents); and so they may unknowingly conduct unauthorized hot work operations that expose your facility.

A Hot Work Permit is not the sole requirement to correct these errors. The permit is a tool that, when used improperly, often impedes the process of safely controlling hot work ignition sources. While the permit is essential, it does not indicate all precautions for every hot work application. Most Required Precautions listed on the permit are generic and apply to many, but not all, hot work areas. If you have a question about hot work management, please review FM Global Property Loss Prevention Data Sheet 10-3, *Hot Work Management*, or contact your FM Global engineer.

## Your First Considerations

Prior to issuing a Hot Work Permit, consider the alternatives: using a cold work method or relocating the work.

In the planning stages, rather than at the last minute, evaluate if an alternative cold work method could be utilized in place of hot work. Another option may be to relocate to a hot work designated area. The Hot Work Permit System should be used only as a last resort. Controlling fuel and ignition sources outside a designated area can be difficult.

Examples of alternative cold work methods:

- Mechanical removal and relocation of frozen piping to a heated area vs. thawing of piping in place with any form of hot work
- Manual hydraulic shears vs. saw/torch cutting
- Mechanical bolting vs. welding
- Screwed or flanged pipe vs. sweat soldering
- Reciprocating saw vs. radial saw
- Standard mechanically attached/fully adhered

FM Approved roof system vs. torch-applied roof system

- Mechanical pipe cutting vs. torch or radial saw cutting
- FM Approved self-drilling or compressed air-actuated steel roof deck fasteners vs. puddle welding
- A roof covering system that is not torch-applied vs. one that is torch-applied

Hot work designated areas are maintained free of combustible and flammable material, often enclosed to control hot work ignition sources from escaping the area, and are protected by automatic sprinkler systems. These construction, occupancy and protection features make hot work designated areas an ideal location to conduct hot work (without warranting a Hot Work Permit System). For guidance on constructing, limiting combustibles and protecting hot work designated areas, refer to Data Sheet 10-3.

As a last resort, use a Hot Work Permit System to manage hot work ignition sources within the facility. When using a Hot Work Permit, protect the facility by removing or isolating combustible/flammable material from the hot work area; confining hot work ignition sources within the hot work area; protecting the hot work area with automatic and manual fire protection systems and equipment; and supervising the hot work area during work and following work completion.

The emphasis of the permit system should be on preventing a fire or explosion by controlling combustibles and hot work ignition sources; however, loss history indicates mistakes can be made preparing and maintaining the hot work area free of combustibles or controlling ignition sources. In these instances, in-service fire protection systems and post-work fire watch and monitoring remain an important contingency to mitigate the consequences of a hot work fire. Use a Hot Work Permit System that meets the guidance in Data Sheet 10-3.

## Implementing a Hot Work Management Program

Hot work fire and explosion prevention begins with management's dedication.

Personnel who supervise a hot work management program are the key to preventing a hot work fire and explosion. Getting the job done right means taking care of fire prevention requirements first. It's true that costs are involved in managing loss prevention, but these costs seem next to nothing when compared with those of a preventable loss of property or production. Even with fixed protection systems in service, the average hot work loss is still more than US\$0.3 million per incident, and over ten times this figure when protection is not provided or is impaired.

Establish a hot work policy and procedures, and make them available.

The facility's senior management should endorse the hot work policy, citing specific responsibility, accountability and the consequences for failure to abide by the hot work management program. The policy should mandate thorough and effective hot work procedures that spell out the requirements of the program, including the first two steps when planning any hot work: (1) considering alternative cold work methods; and (2) relocating work to a hot work designated area. If neither option is feasible, and as a last resort, conduct the work within the facility using a Hot Work Permit System. The hot work permitting section should cover the various hot work permit areas within the facility (e.g., categorized post-work watch and monitoring, designated, high-risk), permit authorizing, permit expiration and contractor supervision expectations. The policy should also spell out the requirements for training, incident and near miss reporting, document retention and auditing.

All employees at the facility should be aware that a hot work policy exists, while the policy and procedures should be accessible to those authorizing, supervising and conducting hot work. Being able to implement effective control for any human element program requires support from all employees involved. The key? Teamwork, education and a clear understanding of the hazards and risks.

## Train and Certify Employees

Conduct initial training for all employees involved in the hot work management program. Following the initial training, provide refresher training for personnel at least annually. Cover general hot work management topics as well as the facility-specific elements of the program. Facility-specific elements may include:

- The various hot work permitting areas (e.g., categorized areas for post-work fire watch and fire monitoring periods, hot work designated areas and/or hot work high-risk areas)
- Permit authorizing process
- Permit expiration and reauthorization procedures, if permitted
- Contractor supervision expectations
- General, non-facility-specific hot work training resources are available from FM Global online ([fmglobal.com/research-and-resources/tools-and-resources](http://fmglobal.com/research-and-resources/tools-and-resources)).
- Maintain records of all employee training.

### Train and certify contractors.

Review all contracts with the contractor. Remind contractors—verbally and in writing—about hot work ignition source hazards, what constitutes hot work at the facility (i.e., a list of all hot work operations), and how to obtain a Hot Work Permit prior to starting work. It's important to explain hot work policies, procedures and responsibilities; make hot work policy and procedures available to all contractors involved with hot work; and describe the consequences for failing to follow the hot work management policy and associated procedures as well as their potential liability should a fire or explosion occur.

### Continually audit and update the hot work program.

As part of the program audit, cover the following areas of the program:

- Review hot work fire and explosion incidents, and equally as important, near miss incidents.
- Review completed inspection forms and hot work permit documentation for thoroughness and correctness.
- Visit and evaluate active hot work sites, and make sure you have associated documentation.
- Evaluate for facility and/or personnel changes that require updating the policy or procedures.

At a minimum, conduct audits annually, but adjust the frequency based on the findings. From the audit, develop corrective actions to address deficiencies and strengthen the effectiveness of the overall program.



## Hot Work Permit – Required Precautions

### Protecting the Hot Work Area

- Verify the hot work equipment is operable and properly arranged.
- Verify automatic fire protection systems are in service, if provided (e.g., automatic sprinklers).
- Verify on-site water supplies serving fire protection systems are in service (i.e., pumps in automatic mode and suction tanks full).
- Verify there are no active or planned fire protection system impairments near the hot work area during the work or during the post-work fire watch and fire monitoring periods. If protection is not provided or is impaired, consider delaying work until protection is restored, or alternatively treat the unprotected area as a hot work high-risk area and provide Additional Required Precautions (e.g., laying charged firefighting hose streams and stationing trained firefighting personnel in the hot work area, or requiring permit authorization by senior management).
- Provide manual firefighting equipment, including supplemental fire extinguishers (in addition to those extinguishers required by local codes).

### Preparing the Hot Work Area

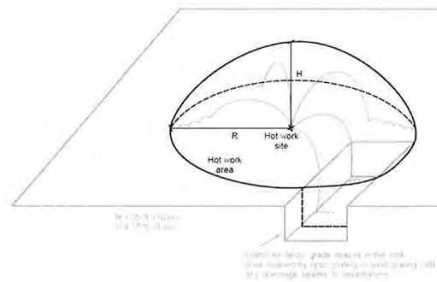
- Define the hot work area as 35 ft. (10 m) horizontally from all hot work sites and a minimum of 15 ft. (5 m) above all hot work sites. When performing elevated work or work in drafty environments, consider extending the hot work area horizontally to 50 ft. (15 m).
- Remove combustibles from the hot work area. If combustibles are nonmoveable, isolate materials from ignition sources by shielding/covering them with FM Approved welding blankets or pads.
- Remove combustible accumulations from within the hot work area (e.g., combustible debris, oil residues, combustible dust/lint).
- Identify and isolate potential sources of flammable gas, ignitable liquid and/or combustible dust/lint that may be released into the hot work area during work. Conducting a job safety analysis may identify sources of these materials and whether the systems need to be just de-energized, or additional protection is warranted such as isolation, drain and purge.
- Test the hot work area for flammable vapor/gas prior to work and as needed during work.
- Protect or shut down ventilation and conveying systems that may transport combustible material into the hot work area or hot work ignition sources out of the area.
- Extend the hot work area to the opposite side of a building assembly (floor, wall, ceiling or roof) when openings exist

through which hot work may pass, or there's a presence of thermally conductive material that may transfer heat through the building assembly. In both cases, combustibles on the other side of the wall may be exposed to hot work ignition sources. In addition to removing combustibles, a second fire watch may be warranted on the opposite side of the building assembly.

- Identify and safeguard combustible-lined equipment, piping or ductwork within the hot work area that have openings that may allow the ingress of hot work ignition sources.

Treat the following as hot work high-risk operations and provide Additional Required Precautions:

- Hot work on thermally conductive material at or near a penetration into a combustible building assembly (e.g., remove portions of the building assembly and install noncombustible replacement materials, monitor temperature of the thermally conductive material before the penetration, temporarily installing a thermal sink on the thermally conductive material before the penetration, or perform fire watch using an infrared camera to inspect the thermally conductive material and wall for hot spots).
- Hot work on combustible building assembly including cutting through non-FM Approved insulated steel deck roof assembly or insulated metal panels (e.g., develop a specific fire emergency response plan including conditions under which the fire service should be called and verify fire service access to the site; stop work immediately if material appears to be smoking; perform fire watch using an infrared camera to inspect the materials for hot spots).
- Torch-applied roofing systems including installation of, repair of or alteration to the roof cover (e.g., develop a specific fire emergency response plan that includes conditions under which the fire service should be called and verify fire service access to the site; stop work immediately if material appears to be smoking; perform fire watch using an infrared camera to inspect the materials for hot spots; locate the asphalt kettle a minimum of 25 ft. (7.5 m) away from the building or combustible yard storage; and close all valves on fuel-fired equipment when unattended).



#### Prepare for Hot Work on/in Equipment

- Identify and isolate interconnected equipment and piping that contains flammable gas, ignitable liquid or combustible dust/lint.
- Drain ignitable liquid and purge flammable vapor/gas from equipment and interconnected piping.
- Test equipment and/or piping for flammable vapor/gas prior to work and as needed during work. Consider testing even if the equipment does not normally contain these materials but could if a process stream is contaminated by a process leak (heat exchanger or wastewater treatment) or decaying organic material (wood pulp).
- Remove combustible debris, dust/lint and residues from the equipment and interconnected piping.
- Treat hot work on combustible-lined equipment, piping or ductwork as a hot work high-risk operation (again consider using an alternative cold work method, label combustible-lined equipment, flood equipment with water or continuously wet down the interior during work and post-work, identify access ports upstream and downstream of the work site and lay out firefighting hose, or isolate equipment upstream and downstream of hot work site using a non-thermally conductive material for a blank).

#### Fire Watch and Monitor of the Hot Work Area

During work, perform a continuous fire watch over the hot work area. The fire watch should consist of the following:

- Extend from start to end of work uninterrupted. If needed, the fire watch responsibilities should be passed temporarily or permanently if the initial fire watch needs to leave the area.
- Ensure hot work ignition sources remain in the defined hot work area.
- Maintain the required precautions listed on the Hot Work Permit.
- Notify emergency contacts prior to attempting to extinguish the fire.
- Stop all work if unsafe conditions are identified and contact the Permit Authorizer.

The Permit Authorizer may require an additional (second) fire watch if: the hot work area and person performing the work are not both visible from a single vantage point; the hot work area is large, multilevel and/or congested; or an opening or thermally conductive assembly extends through a building assembly.

After hot work has concluded, perform a continuous fire watch over the hot work area for 30 or 60 minutes, depending on the post-work category. Guidance on determining the post-work category is provided in FM Global Property Loss Prevention Data Sheet 10-3, Hot Work Management, section 2.0. This fire watch should have the same responsibilities as mentioned previously for the during-work fire watch.

After the post-work fire watch, perform fire monitoring within the hot work area for up to five hours depending on the post-work category. Guidance on determining the post-work category is provided in Data Sheet 10-3, section 2.0. Methods of fire monitoring may include automatic smoke detection with remote alarm annunciation, security video cameras, operators routinely present in the hot work area or intermittent patrols by personnel (i.e., every 15 minutes).

#### Post-Work Categorized Areas

Depending on construction and occupancy fire hazards present at a facility, determine the appropriate post-work fire watch and fire monitoring periods using Data Sheet 10-3, section 2.0. Categories range from A, B-1, B-2, C and D, differing on the potential to support a smoldering fire and result in a large uncontrolled fire (based on FM Global loss history).

#### Hot Work High-Risk Areas

The Required Precautions listed above are general and intended to be applicable in nearly all facilities. Hot Work High-Risk Areas may require Additional Required Precautions, which are above and beyond the standard list of Required Precautions due to the heightened likelihood or consequence of a fire or explosion in the hot work area. Examples of Additional Required Precautions are provided in the previous section (Hot Work Permitting – Required Precautions under the section on Preparing the Hot Work Area).

## FM Global Hot Work Permit System

FM Global's Hot Work Permit (F2630) is a two-part form that helps establish the hot work plan prior to start of work (Part 1) and tracks each step during work and post-work (Part 2). Part 1 of the Hot Work Permit should be posted in a central, visible location within the facility to alert personnel of an active Hot Work Permit within the facility (e.g., maintenance office work board). Part 2 of the Hot Work Permit should be hung in the hot work area to be used as a reference for the fire watch (Required Precautions and emergency contacts), to record completed actions from the hot work plan (completion times) and act as warning (for bystanders smelling or seeing smoke).

On the front of both Parts 1 and 2, there are four sections: (a) the top header with suggestions on avoiding having to use a Hot Work Permit, as well as warnings; (b) instructions in the top left column; (c) fields for recording information about the work on the lower left column; and (d) Required Precautions in the right column. On the back of Part 2 is a place for the emergency contacts.

### Using the FM Global Hot Work Permit System

When the decision is made to use an FM Global Hot Work System, the following procedure is recommended:

The Permit Authorizer ultimately owns the permitting process, including ensuring the hot work plan is appropriate for the hazards present (Required Precautions) and the Required Precautions are in place prior to starting work.

The white-shaded fields on the yellow permit highlight fields that may need to be completed during the permitting process.

### Pre-Work

- Consider using an alternative cold work method or relocating the work to a hot work designated area (Permit Authorizer).
- Fill in the fields in the left column of Part 1, specify the Required Precautions to take on the right column of Part 1, along with method of fire monitoring on Part 2 lower left column; fill in the emergency contacts on the back of Part 2 and submit to the Permit Authorizer for approval.
- Implement the Required Precautions and any Additional Required Precautions.
- Verify the Required Precautions (and any Additional Required Precautions), fill in the permit expiration information, and print and sign authorizing the start of work (Permit Authorizer).
- Issue Part 2 to the person performing the work, to be hung in the hot work area (person performing work).
- Post Part 1 in a central, visible location (e.g., maintenance office work board) until the work and post-work periods are completed.
- Fill in the start of work on Part 2 left column (person performing work).

### During Work

- Verify the Required Precautions remain in place, the scope of work is restricted to that specified on the permit, hot work ignition sources remain in the defined hot work area, and the hot work area is firesafe. This fire watch should be performed continuously from start of work to work completion (fire watch).
- When needed, record Lower Explosive Limit (LEL) readings (fire watch).
- Upon work completion, record time on Part 2 left column (person performing work).

### Post-Work

- Following work completion, perform a continuous fire watch of the hot work area for the specified duration to verify the Required Precautions remain in place and the hot work area is firesafe (post-work fire watch).
- Record post-work fire watch completion time, and if specified in the Required Precautions, hand off the hot work area to the fire monitor (post-work fire watch).
- If specified in the Required Precautions, perform fire monitoring within the hot work area for the specified duration to verify Required Precautions remain in place and the hot work area is firesafe (post-work fire watch).
- If specified in the Required Precautions, record the fire monitoring completion time and notify the Permit Authorizer (fire monitor).
- Following the conclusion of the post-work fire watch and/or fire monitoring, conduct a final check of the hot work area for firesafe conditions to close out the active permit (Permit Authorizer).
- Combine Parts 1 and 2 and retain the completed Hot Work Permit.

## Resources

- FM Global Property Loss Prevention Data Sheet 10-3, *Hot Work Management*
- Understanding the Hazard: Hot Work (P0032)
- FM Global Hot Work Permit App ([fmglobal.com/research-and-resources/tools-and-resources](http://fmglobal.com/research-and-resources/tools-and-resources))
- Hot Work Permit (F2630)

*Note: Above items with P- or F-numbers are available separately and can be accessed from our website at [fmglobal.com](http://fmglobal.com).*

## Contact Us:

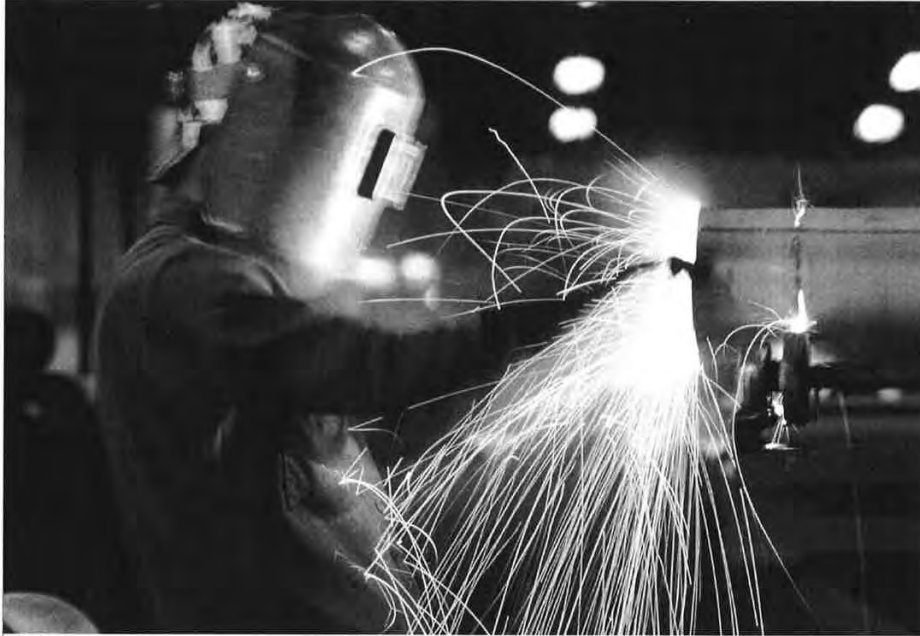
To find an FM Global office nearest you,  
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8





Don't Get Burned  
by Hot Work





All hot work fires and explosions are preventable. Yet every year hundreds, if not thousands, of preventable hot work causes fires and explosions—placing facilities, business operations and people at risk. Preventing fires and explosions ignited by hot work takes collaboration between facility management, personnel and contractors. Senior managers need to be involved to endorse the hot work management policy and procedures, and ensure resources are available to effectively implement them. And, facility personnel and contractors have to do their part in following these procedures, no matter how insignificant they may seem.

This brochure defines the key elements of a successful hot work management program. It outlines for senior management ways to establish and implement an effective hot work management policy. And, it details for facility personnel, as well as contractors, guidelines for safely performing hot work operations.

*This brochure is made available for informational purposes only in support of the insurance relationship between FM Global and its clients. This information does not change or supplement policy terms or conditions. The liability of FM Global is limited to that contained in its insurance policies.*

Don't Get Burned by Hot Work 2 of 12

### No Industry Is Safe

Hot work—any operation that produces flames, sparks or heat—is a leading cause of fire and explosions throughout the world. FM Global loss history shows there is no industry or type of facility immune to this ignition source hazard. Torch or radial-saw cutting, welding, brazing, soldering, grinding, and torch-applied roof covering or plastic shrink-wrap are all examples of hot work.

From 1995 to 2014 (a 20-year period), FM Global clients experienced 736 hot work ignited fires or explosions with a total indexed gross of US\$1,907 million in property loss and business interruption, and an average gross loss of US\$2.6 million per incident. All losses could have been prevented with proper hot work management.

*A Hot Work Permit is a tool. Effective hot work management requires a policy, procedures and trained personnel.*

Companies that utilize the FM Global Hot Work Permit say their success in preventing fires caused by hot work would not be possible without senior management's support of a strong hot work program.

Recurring Breakdowns in Hot Work Management Lead to Hot Work Fires and Explosions  
The following hot work management oversights prevail every year in incidents of fire and explosion:

- Lack of a formal hot work management program at the facility.
- Failure to recognize and safeguard combustible, ignitable or flammable material in the hot work area.
- Inadequate during work fire watch including breaks (i.e., not continuous).
- Delegating hot work management to contractors without training or supervision.

Implementing a Hot Work Management Program

- Minimize hot work permitting by considering alternative cold work methods or relocating the work to a hot work designated area.
- Establish a formal policy and procedures for hot work management endorsed by senior management.
- Train personnel and contractors on the hot work policy and procedures, and on the facility-specific fire and explosion hazards.
- Retain hot work management documentation for program audits (e.g., completed Hot Work Permits, incident reports and near miss reports).
- Audit the program (not just the documentation); evaluate active hot work areas; and review the facility for physical or personnel changes that impact the program.

- Manage and supervise contractors conducting hot work within the facility.



Loss studies show that the following three steps in hot work permitting are often neglected. Make sure your hot work management program emphasizes them.

1. **Consider alternatives to using hot work permitting.** Use an alternative cold work method to join, trim or sever without compromising mechanical integrity. Switching to a cold work method eliminates the hot work fire and explosion risk. Otherwise, relocate the work to a hot work designated area within the facility. These areas are designed and maintained to be free of combustibles and confine hot work ignition sources to that area.
2. **Properly prepare and maintain the hot work area and/or equipment.** Follow the hot work 35-foot (10-meter) rule

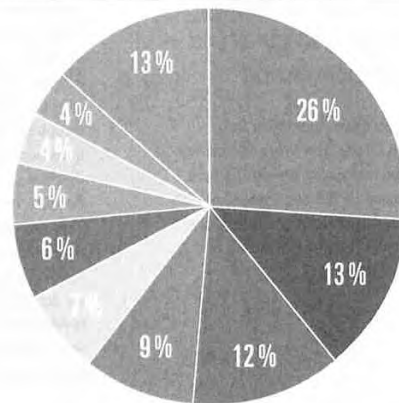
on page 8 and emphasize these precautions:

- Identify and cover combustible construction in the hot work area.
  - Remove moveable combustible contents, or cover with FM Approved blankets or pads.
  - Remove ignitable liquid, combustible dust/lint and combustible deposits/residues.
  - Shut down process equipment that could release combustible, ignitable or flammable material into the hot work area.
  - Shut down ventilation and conveying systems capable of transporting hot work ignition sources outside the hot work area.
  - Purge equipment and interconnected equipment of flammable gas/vapor.
  - Provide a fire watch in the hot work area from start of work to work completion, even during breaks, to ensure the required precautions remain implemented and the hot work area is firesafe.
  - Provide a second fire watch on the opposite side of floors, walls, ceilings or roofs when unprotected openings are present, or when working on thermally conductive materials passing through.
3. **Ensure both fire protection and hot work equipment work properly.** Make sure the sprinklers, water supply and other fixed fire protection systems are in service.
    - Provide operable fire extinguishers in the hot work area.
    - Ensure hot work equipment is in good working condition.

Top Ignition Sources of Fire and Explosion (2000 through 2004) (gross loss in percentages)

Every year, hot work is among the top five causes of increasingly severe and frequent fire and explosion at FM Global insured properties.

■ Electricity	26 %
■ Hot Work	13 %
■ Operating Conditions	12 %
■ Arson	9 %
■ Hot Surface	7 %
■ Friction	6 %
■ Spark/Ember	5 %
■ Overheating	4 %
■ Exposure From Outside Property	4 %
■ Other	13 %



Don't Get Burned by Hot Work 4 of 10



#### How Effective Is Your Hot Work Management Program?

- Do you have a written management policy covering plant or corporate intention to control hot work? Is it clearly communicated to all employees and contractors?
- Do you clearly communicate detailed, written hot work management procedures to all employees and contractors?
- Do the procedures include all of the following:
  - a requirement to consider alternative cold work methods to hot work, particularly during the design phase of all new construction, repair and maintenance projects, or relocating to a hot work designated area
  - an assigned, named position to manage the hot work program
  - an assigned, trained hot work permit authorizer
  - employee education and empowerment to stop unsafe hot work operations trained and supervised contractors
  - a process to properly evaluate and understand fire and explosion hazards within your facility, including identifying hot work high-risk areas?
  - formally stated consequences for violating hot work procedures

- Are permit authorizers:
  - knowledgeable in fire and explosion hazards pertaining to building contents, operations and facility construction, and in predetermined post-work fire watch and monitoring durations in the various facility areas
  - available (or on call) 24 hours a day
  - contacted for all hot work (inside and outside of facility buildings)
  - authorized to stop all hot work
  - required to visit all hot work areas prior to authorizing the permit and start of work
  - required to personally complete the Hot Work Permit? (This tag is conspicuously posted at the job site by the fire safety supervisor.)

#### Managing Outside Contractors

The trend toward outsourcing maintenance and renovations has its risks. A contractor may have the technical expertise to perform hot work, but most likely does not have a full understanding of the facility's fire and explosion hazards, nor the hot work management policy and procedures.

Before allowing contractors to start any job, it's crucial you make sure they:

- sign a contract agreeing to faithfully follow your hot work policy and understand the job will not proceed without one

- demonstrate proficiency in your company's hot work safety training program and ability to carry out procedures; and
- understand they will be properly supervised by your employees.

#### Empowering Personnel and Making Them Accountable

Combustible material capable of being ignited by hot work ignition sources are present just about everywhere—in offices, storage, manufacturing sites, even resorts. As a result, it's crucial that facility personnel do their part to manage hot work by following the policy, procedures and Hot Work Permit System, including every required precaution, no matter how insignificant it might seem. Cutting just one corner undermines the entire hot work management effort and creates opportunity for another near miss or major incident. Furthermore, property loss can amount to job loss. (For more information on the role of facility personnel, see page 7.)

#### The Importance of Fire Protection

Manual fire protection (extinguishers, hoses, etc.) should be operating and in place before the job starts. If automatic sprinkler protection is provided for the area, make sure the system is in service. The presence of sprinkler protection means the area contains, or is constructed of, combustible material. And that one word—combustible—is a critical reason for conducting hot work with great care.

## Facility-Personnel: Know the Hazards, Follow the Policy

### Other FM Global Hot Work Resources

Be sure to take advantage of these  
FM Global resources for more  
information on controlling hot work:

- FM Global Property Loss  
Prevention Data Sheet 10-3, *Hot  
Work Management*
- *Hot Work Permit* form (F2630)\*
- *Pocket Guide to Hot Work Loss  
Prevention* (P9602)\*

*\*available in several languages.*

Fire and explosion hazards within facilities are often not readily apparent, even to the most experienced workers. For example:

- Almost everything around you can burn. Sparks and molten globules become uncontrolled ignition sources, often flying or rolling long distances. One spark landing on or near combustible material—like insulation, wood particles or ignitable liquid—is enough to start a fire.
- Sparks can settle in areas you can't see, such as the tops of high ledges, floor openings, vents, recessed walls or ceiling openings. And, they can smolder unnoticed for hours before igniting a fire.
- Combustible material is not always visible. Cutting into a metal wall can ignite the inside wall. With enough heat, anything combustible on the other side—or close to it—can catch fire.
- The flame of an oxygen-acetylene torch can exceed 6,000°F (3,316°C). Hot work on/in vessels or tanks can ignite residual ignitable deposits/vapor or flammable gas, unless the vessels or tanks are properly cleaned, inerted, and inspected before and during hot work activities.

Therefore, it's important that facility personnel do their part to minimize the risk posed by hot work ignition sources. Although the permit authorizer and fire watch are responsible for specific duties, as outlined below, all employees need to assume accountability for following the precautions outlined in your hot work policy.

### Owner of the Hot Work Permit – the Permit Authorizer

The permit authorizer's duties include implementing the company's hot work policy and permit procedures. Before authorizing any hot work job, the authorizer must ask:

Is a hot work permit the only option? Consider alternatives such as cold work methods or relocating the work to a hot work designated area. Can either of these alternatives be employed? Often, the answer is yes.

Alternative cold work methods may include:

- cutting with a hand or reciprocating electric saw, or pipe cutter;
- using a mechanical bolting method;
- using hand-filing instead of grinding;
- installing threaded or press clamped pipe instead of welded or soldered where local codes permit; and
- avoiding roofing torches (many types of FM Approved roof coverings can be installed without torches).

## Facility-Personnel: Know the Hazards, Follow the Policy (continued)

### Authorizing the Hot Work Job

If there is no alternative to conducting hot work requiring a permit, and the area in question is firesafe, the fire safety supervisor uses the two-part FM Global Hot Work Permit to authorize the hot work. Before signing the permit, the authorizer discusses with the hot work operator and the fire watch exactly what the work will involve, and ensures all needed required precautions identified on the permit have been implemented prior to the start of work (see the discussion below on the Hot Work Permit Required Precautions). Then, Part 2 of the FM Global Hot Work Permit is displayed prominently in the work area, while Part 1 is posted in a visible, central area (e.g., maintenance office) to alert personnel that active hot work is in progress within the facility.



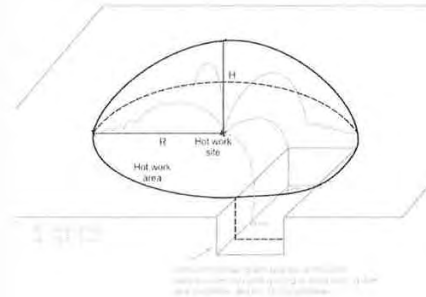
### Hot Work Permit – Required Precautions

The required precautions listed in the right column center upon: controlling combustible, ignitable and flammable material in the hot work area or in equipment; maintaining hot work ignition sources within the hot work area; and providing fire protection for the hot work area. Control of combustibles and ignition sources are intended to prevent a fire or explosion, while fire protection mitigates the fire risk in the event prevention controls fail due to a mistake or error in judgment, which unfortunately happens on occasion.

- Verify the hot work equipment is operable and properly arranged.

### Protecting the Hot Work Area

- Verify automatic fire protection systems are in service, if provided (e.g., automatic sprinklers).
- Verify onsite water supplies serving fire protection systems are in service (i.e., pumps in automatic mode and suction tanks full).
- Verify there are no active or planned fire protection system impairments near the hot work area during the work or during the post-work fire watch and fire monitoring periods. If protection is not provided or is impaired, consider delaying work until protection is restored, or alternatively treat the unprotected area as a hot work high-risk area and provide Additional Required Precautions (e.g., laying charged firefighting hose streams and stationing trained firefighting personnel in the hot work area, or requiring permit authorization by senior management).
- Provide manual firefighting equipment, including supplemental fire extinguishers (in addition to those extinguishers required by local codes).



### Preparing the hot work area

When preparing for permitted hot work, the hot work area first needs to be defined. Use the 35-ft. (10-m) rule to define the hot work area horizontally from the hot work site, and a minimum of 15 ft. (5 m) above the hot work site. If conducting elevated hot work, consider expanding the hot work area horizontally to 50 ft. (15 m). Once defined, provide the following required precautions to control combustibles and hot work ignition sources within the hot work area.

- Remove combustibles from the hot work area. If combustibles are nonmoveable, isolate materials from ignition sources by shielding/covering them with FM Approved welding blankets.

### Facility-Personnel: Know the Hazards, Follow the Policy (continued)

- ✦ Remove combustible accumulations from within the hot work area (e.g., combustible debris, oil residues or combustible dust/lint).
- ✦ Identify and isolate potential sources of flammable gas, ignitable liquid and/or combustible dust/lint that may be released into the hot work area during work. Conducting a job safety analysis may identify sources of these materials and whether the systems need to be just de-energized, or if additional protection is warranted such as isolation, drain and purge.
- ✦ Test the hot work area for flammable vapor/gas prior to work and as needed during work.
- ✦ Protect or shut down ventilation and conveying systems that may transport combustible material into the hot work area or hot work ignition sources out of the area.
- ✦ Extend the hot work area to the opposite side of a building assembly (floor, wall, ceiling or roof) when openings exist through which hot work ignition sources may pass through, or working on thermally conductive materials that may transfer heat through the building assembly. In both cases, combustibles on the other side of the wall may be exposed to hot work ignition sources.
- ✦ Identify and safeguard combustible-lined equipment, piping or ductwork within the hot work area that have openings that may allow the ingress of hot work ignition sources.
- ✦ Treat the following as hot work high-risk operations and provide Additional Required Precautions:
  - Hot work on thermally conductive materials at or near a penetration into a combustible building assembly (e.g., remove portions of the building assembly and install noncombustible replacement materials, monitor temperature of the thermally conductive material before the penetration, temporarily installing a thermal sink on the thermally conductive material before the penetration, or perform fire watch using an infrared camera to inspect the thermally conductive material and wall for hot spots).
  - Hot work on combustible building assembly including cutting through non-FM Approved insulated steel deck roof assembly or insulated metal panels (e.g., developing a specific fire emergency response plan, including conditions under which the fire service should be called and verifying fire service access to the site; stopping work immediately if material appears to be smoking; performing fire watch using an infrared camera to inspect the materials for hot spots).
  - Torch-applied roofing systems including installation of, repair of or alteration to the roof cover (e.g., developing a specific fire emergency response plan including conditions under which the fire service should be called and verifying fire service access to the site stopping work immediately if material appears to be smoking; performing fire watch using an infrared camera to inspect the materials for hot spots; locating the asphalt kettle a minimum of 25 ft. (7.5 m) away from the building or combustible yard storage; and closing all valves on fuel-fired equipment when unattended).

#### Prepare for Hot Work on/in Equipment

When preparing for permitted hot work on/in equipment, the following precautions may need to be considered in addition to preparing the hot work area around the equipment.

- ✦ Identify and isolate interconnected equipment and piping that contain flammable gas, ignitable liquid or combustible dust/lint.
- ✦ Drain ignitable liquid and purge flammable vapor/gas from equipment and interconnected piping.
- ✦ Test equipment and/or piping for flammable vapor/gas prior to work and as needed during work. Consider testing even if the equipment does not normally contain these materials but could if a process stream is contaminated by a process leak (heat exchanger or wastewater treatment) or decaying organic material (wood pulp).
- ✦ Remove combustible debris, dust/lint and residues from the equipment and interconnected piping.
- ✦ Treat hot work on combustible-lined equipment, piping or ductwork as a hot work high-risk operation (again consider using an alternative cold work method, label combustible-lined equipment, flood equipment with water or continuously wet down the interior during work and post-work, identify access ports upstream and downstream of the work site and lay out firefighting hose, or isolate equipment upstream and downstream of hot work site using non-thermally conductive material for a blank).

## Facility-Personnel: Know the Hazards, Follow the Policy (continued)

### Fire Watch and Monitor of the Hot Work Area

- During work, perform a continuous fire watch over the hot work area. The continuous fire watch should consist of the following:
  - Extend from start to end of work uninterrupted. If needed, the fire watch responsibilities should be passed temporarily or permanently if the initial fire watch needs to leave the area.
  - Ensure hot work ignition sources remain in the defined hot work area.
  - Maintain the required precautions listed on the Hot Work Permit in place.
  - Notify emergency contacts prior to attempting to extinguish the fire.
  - Stop all work if unsafe conditions are identified, and contact the Permit Authorizer.

The permit authorizer may require an additional (second) fire watch individual if: the hot work area and person performing the work are not both visible from a single vantage point; the hot work area is large, multilevel and/or congested; or an opening or thermally conductive assembly extends through a building assembly.

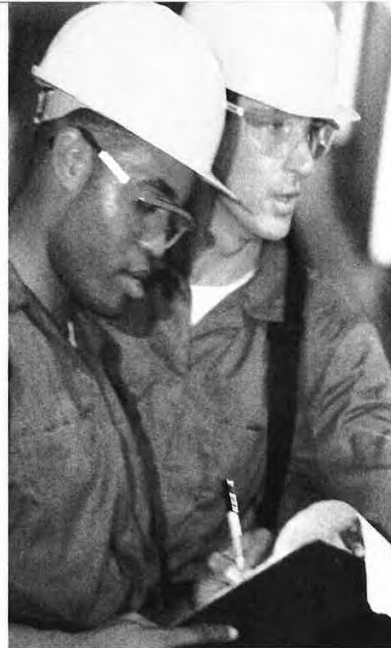
- After hot work has concluded, perform a continuous fire watch over the hot work area for 30 or 60 minutes depending on the post-work category. Guidance on determining the post-work category is provided in FM Global Property Loss Prevention Data Sheet 10-3, Hot Work Management section 2.0. This fire-watch should have the same responsibilities as mentioned previously in the during-work fire watch.
- After the post-work fire watch, perform fire monitoring within the hot work area for up to 5 hours depending on the post-work category. Guidance on determining the post-work category is provided in Data Sheet 10-3 section 2.0. Methods of fire monitoring may include automatic smoke detection with remote alarm annunciation, security video cameras, operators routinely present in the hot work area or intermittent patrols by personnel (i.e., every 15 minutes).


### Post-Work Categorized Areas

Depending on construction and occupancy fire hazards present at a facility, determine the appropriate post-work fire watch and fire monitoring periods using Data Sheet 10-3, section 2.0. Categories range from A, B-1, B-2, C and D differing on the potential to support a smoldering fire, and result in a large uncontrolled fire (based on FM Global loss history).

### Hot Work High-Risk Areas

The Required Precautions listed above are general and intended to be applicable in nearly all facilities. Hot work high-risk areas may require Additional Required Precautions, which are above and beyond the standard list of Required Precautions due to the heightened likelihood or consequence of a fire or explosion in the hot work area. Examples of Additional Required Precautions are provided in the previous section "Preparing the Hot Work Area."



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**END OF SECTION**