

**PROJECT MANUAL
And
TECHNICAL SPECIFICATIONS
For
LYMAN CENTER – ROOF REPLACEMENT – 2023**

BID NUMBER: RFQ-23-SCSU-01

PROJECT NUMBERS: SCSU-2022-04

BID OPENING – MARCH 16, 2023, 2:00 PM



**STATE OF CONNECTICUT
SOUTHERN CONNECTICUT STATE UNIVERSITY
Joe Bertolino
PRESIDENT**

Prepared By:

*Southern Connecticut State University
Office of Facilities Planning and Architectural Services
615 Fitch Street
Hamden, CT 06514-4803*

*Friar Architecture, Inc.
21 Talcott Notch Road
Farmington, CT 06032*

University Representative:

*Peter J. Visentin
(Tel) 203- 392-6055
(Fax) 203- 392-6058
(E-Mail) Visentinp1@SouthernCT.edu*

DATE: FEBRUARY 16, 2023

FORMS TO BE RETURNED WITH BID

THE FOLLOWING FORMS & INFORMATION MUST BE SUBMITTED WITH YOUR BID PROPOSAL OR YOUR BID PROPOSAL WILL NOT BE CONSIDERED:

- 1. FORM SCSU-1, CONTRACT PROPOSAL (Must Be Signed)**
- 2. OPM ETHICS FORM 5, CONSULTING AGREEMENT AFFIDAVIT. (Must Be Signed and Notarized)**
- 3. OPM ETHICS FORM 6, AFFIRMATION OF RECEIPT OF STATE ETHICS LAWS SUMMARY (Must be Submitted & Signed By General Contractor if Bid Proposal is \$500,000.00 or more)**
- 4. OPM ETHICS FORM 7, IRAN CERTIFICATION. (Must Be Signed and Notarized)**
- 5. BID PROPOSAL FORM (Must Be Signed)**
- 6. CHRO CONTRACT COMPLIANCE REGULATIONS NOTIFICATION TO BIDDERS (Must Be Signed)**
- 7. FORM SCSU-4F, BIDDERS QUALIFICATIONS STATEMENT (Must Be Signed and Notarized)**
- 8. CERTIFICATE OF INSURANCE (Must Be Signed)**
- 9. Please submit your current State of Connecticut Certified Small and Minority Owned Business certificate, if applicable to this bid.**
- 10. A statement indicating the number of years your company has been in business.**
- 11. Bid Bond (Signature of one witness for the principal and one witness for the surety must appear on the bond)**
- 12. Bidders are advised that for bids estimated to be in excess of \$500,000.00, a valid Department of Administration Services Prequalification Certificate and Update Statement must accompany the bid. Application for this program can be accessed by going to www.das.state.ct.us/Business_Svs/PreQual/Prequal.asp**

For signing of the contract the following info must be provided to the Purchasing Department:

- 1. OPM ETHICS FORM 1 - GIFT AND CAMPAIGN CONTRIBUTION CERTIFICATION (Must Be Signed and Notarized)**

Upon award of the contract the following info must be provided to the Purchasing Department:

- 1. NONDISCRIMINATION CERTIFICATION (Must be Signed)**
- 2. If the value of the project is \$50,000.00 to \$499,999.00, or if the successful bidder has 50 or more employees, the successful qualified low bidder on this project must submit an Affirmative Action Plan to the Commission on Human Rights and Opportunities (CHRO). The plan must be filed prior to starting work on any project.**
- 3. If the value of the project is \$500,000.00 or more, the successful qualified low bidder on this project must submit an Affirmative Action Plan to CHRO. The plan must be filed and approved by CHRO prior to starting work on any project.**
- 4. Performance Bond (Signature of two witnesses for the principal and two witnesses for the surety must appear on the bond)**
- 5. Payment Bond (Signature of two witnesses for the principal and two witnesses for the surety must appear on the bond)**

LYMAN CENTER – ROOF REPLACEMENT – 2023 PROJECT NUMBER: SCSU-2022-04
--

PROJECT MANUAL TABLE OF CONTENTS

DIVISION 0	BIDDING REQUIREMENTS, CONTRACT FORMS AND CONDITIONS OF THE CONTRACT	Page Count
Section No.	Title	Pages
	Forms to be Returned with Bid	1
00 01 00	Table of Contents	6
	(Form SCSU-1) Contract Proposal (Must be Signed)	1
	SCSU Construction Contract 7-09-19	42
	CSU Terms and Conditions	4
	Instructions to Bidders, Conditions	3
00 11 16	Invitation to Bid	1
	(OPM Ethics Form 1) Gift and Campaign Contribution Certification (Must be Signed and Notarized)	2
	(OPM Ethics Form 5) Consulting Agreement Affidavit (Must be Signed and Notarized)	1
	(OPM Ethics Form 6) Affirmation of Receipt of State Ethics Laws Summary (Must be Signed)	1
	OPM Ethics Form 7) Iran Certification (Must be Signed and Notarized)	1
00 21 13	Notice to Bidders	5
00 21 23	Objective Criteria for Evaluation of Bidders	1
	Nondiscrimination Certification (Must be Signed)	1
00 40 13	Bid Proposal Form (Must be Signed)	15
	Formerly SEEC Form 11	2
	CHRO Contract Compliance Regulations (Must be Signed)	5
00 45 13	Bidders Qualifications Statement w/Tables (Must be Signed and Notarized)	6
	Attachment 1	2
	Attachment 2	1
	Prevailing Wages Rates/Foot Notes	8
	Contractor Wage Certification Form	1
	(Form SCSU-7804) Building Contractor Reporting Form	1
00 62 13	Certificate of Insurance	4
00 72 13	General Conditions of the Contract for Construction	33
00 73 00	Supplementary General Conditions	2

LYMAN CENTER – ROOF REPLACEMENT – 2023 PROJECT NUMBER: SCSU-2022-04
--

PROJECT MANUAL TABLE OF CONTENTS

DIVISION 0	BIDDING REQUIREMENTS, CONTRACT FORMS AND CONDITIONS OF THE CONTRACT	Page Count
Section No.	Title	Pages
	Forms to be Returned with Bid	1
00 01 00	Table of Contents	4
	(Form SCSU-1) Contract Proposal (Must be Signed)	1
	SCSU Construction Contract 7-09-19	42
	CSU Terms and Conditions	4
	Instructions to Bidders, Conditions	3
00 11 16	Invitation to Bid	1
	(OPM Ethics Form 1) Gift and Campaign Contribution Certification (Must be Signed and Notarized)	2
	(OPM Ethics Form 5) Consulting Agreement Affidavit (Must be Signed and Notarized)	1
	(OPM Ethics Form 6) Affirmation of Receipt of State Ethics Laws Summary (Must be Signed)	1
	OPM Ethics Form 7) Iran Certification (Must be Signed and Notarized)	1
00 21 13	Notice to Bidders	4
00 21 23	Objective Criteria for Evaluation of Bidders	1
	Nondiscrimination Certification (Must be Signed)	1
00 40 13	Bid Proposal Form (Must be Signed)	16
	Formerly SEEC Form 11	2
	CHRO Contract Compliance Regulations (Must be Signed)	5
00 45 13	Bidders Qualifications Statement w/Tables (Must be Signed and Notarized)	6
	Attachment 1	2
	Attachment 2	1
	Prevailing Wages Rates/Foot Notes	7
	Contractor Wage Certification Form	1
	(Form SCSU-7804) Building Contractor Reporting Form	1
00 62 13	Certificate of Insurance	4
00 72 13	General Conditions of the Contract for Construction	27
00 73 00	Supplementary General Conditions	2

LYMAN CENTER – ROOF REPLACEMENT – 2023 PROJECT NUMBER: SCSU-2022-04
--

TECHNICAL SPECIFICATIONS

01 00 00	DIVISION 01 GENERAL REQUIREMENTS (Small Projects)	
Section No.	Title	Page No.
01 10 00	SUMMARY	
01 11 00	Summary of Work	2
01 11 13	Work Covered By Contract Documents	2
01 12 16	Work Sequence - Phase(s);	3
01 12 19	Contract Interface	4
01 14 00	Work Restrictions	4
01 14 16	Coordination With Occupants	5
01 20 00	PRICE AND PAYMENT PROCEDURES	
01 21 00	Allowances (NOT USED)	7
01 22 00	Unit Prices – General (NOT USED)	7
01 23 00	Supplemental Bids	8
01 25 00	Substitution Procedures	9
01 26 00	Contract Modification Procedures	13
01 29 76	Progress Payment Procedures	15
01 30 00	ADMINISTRATIVE REQUIREMENTS	
01 31 13	Project Coordination	19
01 31 19	Project Meetings	19
01 32 16	Construction Progress Schedules	21
01 33 00	Submittal Procedures	23
01 35 16	Alteration Project Procedures	29
01 35 53	Security Procedures	31
01 40 00	QUALITY REQUIREMENTS	
01 42 16	Definitions	32
01 42 19	Referenced Standards	33
01 45 00	Quality Control	33

LYMAN CENTER – ROOF REPLACEMENT – 2023 PROJECT NUMBER: SCSU-2022-04
--

01 50 00	TEMPORARY FACILITIES AND CONTROLS	
01 51 13	Temporary Electricity And Lighting	36
01 51 16	Temporary Fire Protection	36
01 51 33	Temporary Telecommunications	36
01 51 36	Temporary Water	37
01 52 13	Field Offices and Sheds	37
01 52 19	Temporary Sanitary Facilities	37
01 54 00	Construction Aids	37
01 55 16	Haul Routes	38
01 56 00	Temporary Barriers And Enclosures	38
01 56 43	Temporary Protection	38
01 57 19	Temporary Environmental Controls	39
		39
01 60 00	PRODUCT REQUIREMENTS	
01 60 00	Product Requirements	42
01 70 00	EXECUTION AND CLOSEOUT PROCEDURES	
01 73 29	Cutting and Patching	43
01 74 13	Progress Cleaning	43
01 77 00	Closeout Procedures	44
01 78 30	Warranties And Bonds	47

LYMAN CENTER – ROOF REPLACEMENT – 2023 PROJECT NUMBER: SCSU-2022-04
--

DIVISION 02 EXISTING CONDITIONS		
Section No.	Title	Pages
02 41 19	SELECTIVE DEMOLITION	5

DIVISION 03 CONCRETE		
Section No.	Title	Pages
03 51 13	CEMENTITIOUS WOOD FIBER DECKS	4

DIVISION 04 MASONRY		
Section No.	Title	Pages
04 01 10.02	EXTERIOR MASONRY CLEANING	6

DIVISION 05 METALS		
Section No.	Title	Pages
05 50 00	METAL FABRICATIONS	6

DIVISION 06 WOOD, PLASTICS, AND COMPOSITES		
Section No.	Title	Pages
06 10 53	MISCELLANEOUS ROUGH CARPENTRY	5

DIVISION 07 THERMAL AND MOISTURE PROTECTION		
Section No.	Title	Pages
07 01 50.19	PREPARATION FOR REROOFING	6
07 19 00	WATER REPELLENTS	6
07 21 00	THERMAL INSULATION	4
07 53 23	ETHYLENE-PROPYLENE-DIENE-MONOMER (EPDM) ROOFING BASE BID (60 MIL)	13
07 53 23	ETHYLENE-PROPYLENE-DIENE-MONOMER (EPDM) ROOFING SUPPLEMENTAL BID #1 (90MIL)	13
07 62 00	SHEET METAL FLASHING & TRIM	9

LYMAN CENTER – ROOF REPLACEMENT – 2023 PROJECT NUMBER: SCSU-2022-04
--

07 71 00	ROOF SPECIALTIES	7
07 72 00	ROOF ACCESSORIES	7
07 72 33	ROOF HATCH RAILING SYSTEM	2
07 84 13	PENETRATION FIRESTOPPING	9
07 92 00	JOINT SEALANTS	3

DIVISION 08	OPENINGS
--------------------	-----------------

Section No.	Title	Pages
08 31 13	ACCESS DOORS & FRAMES	4

DIVISION 09	FINISHES
--------------------	-----------------

Section No.	Title	Pages
09 01 20.91	PLASTER REPAIR	6
09 21 16	GYPSUM BOARD ASSEMBLIES	11
09 51 13	ACOUSTICAL PANEL CEILINGS	8
09 91 23	INTERIOR PAINTING	5

DIVISION 22	PLUMBING FINISHES
--------------------	--------------------------

Section No.	Title	Pages
22 05 29	HANGERS & SUPPORTS FOR PLUMBING PIPING & EQUIPMENT	8
22 14 13	FACILITY STORM DRAINAGE PIPING	7
22 14 23	STORM DRAINAGE PIPING SPECIALTIES	3

DIVISION 50	PROJECT SPECIFIC AVAILABLE INFORMATION
--------------------	---

Section No.	Title	Pages
50 10 00	EXISTING CONDITIONS INFORMATION	54
50 60 00	FM GLOBAL CHECKLIST FOR ROOFING SYSTEMS	5

LYMAN CENTER – ROOF REPLACEMENT – 2023 PROJECT NUMBER: SCSU-2022-04
--

<u>DRAWING LIST</u>

Sheet No.	Title
C.1	COVER SHEET
R0.1	REFERENCE SHEET / CODE INFORMATION
L1.1	SITE LOGISTICS PLAN
A1.1	FIRST FLOOR PLAN
A1.2	SECOND FLOOR PLAN
A2.0	ROOF DEMOLITION PLAN
A2.1	ROOF PLAN – PART A
A2.2	ROOF PLAN – PART B
A2.3	ROOF DETAILS
A2.4	ROOF DETAILS
A2.5	ROOF DETAILS
A3.1	EXTERIOR ELEVATIONS – SUPPLEMENTAL BID #2

END OF TABLE OF CONTENTS

READ CAREFULLY

BID NO.: RFQ-23-SCSU-01	BID OPENING DATE: March 16, 2023	BID OPENING TIME: 2:00 PM	SURETY AMOUNT:	DATE ISSUED: February 16, 2023
-----------------------------------	--	-------------------------------------	----------------	--

COMMODITY CLASS/SUBCLASS AND DESCRIPTION:
Lyman Center – Roof Replacement - 2023

TERM OF CONTRACT/DELIVERY DATE REQUIRED

Richard Glasson 2/07/23
Procurement Date
Email: procurement@southernct.edu

AFFIRMATION OF BIDDER: The undersigned bidder affirms and declares:

1. That this proposal is executed and signed by said bidder with full knowledge of the standard bid and contract terms and conditions of current issue and in effect on the date of bid issue.
2. Your written signature below indicates agreement with the CSUS Standard Terms and Conditions of which are incorporated herein.

Bidder Information

COMPLETE COMPANY NAME (TRADE NAME, DOING BUSINESS AS) SOCIAL SECURITY OR FEDERAL EMPLOYER IDENTIFICATION NUMBER				
COMPANY ADDRESS	STREET	CITY	STATE	ZIP CODE
CONTACT NAME (TYPED OR PRINTED)		TELEPHONE NUMBER (INCLUDE TOLL-FREE NUMBERS)		FAX NUMBER
WRITTEN SIGNATURE OF PERSON AUTHORIZED TO SIGN BIDS ON BEHALF OF THE ABOVE NAMED COMPANY				DATE EXECUTED
TYPE OR PRINT NAME OF AUTHORIZED PERSON			TITLED OF AUTHORIZED PERSON	
COMPANY E-MAIL ADDRESS AND/OR COMPANY WEB SITE				
IS YOUR BUSINESS A: <input type="checkbox"/> PROPRIETORSHIP (INDIVIDUAL) <input type="checkbox"/> PARTNERSHIP OR <input type="checkbox"/> CORPORATION (TYPE OF CORPORATION)				
IS YOUR BUSINESS CURRENTLY A DEPARTMENT OF ADMINISTRATIVE SERVICES CERTIFIED SMALL BUSINESS ENTERPRISE: <input type="checkbox"/> YES (ATTACH CERTIFICATE TO BID) <input type="checkbox"/> NO				
IF YOUR BUSINESS IS A PARTNERSHIP , YOU MUST ATTACH THE NAMES AND TITLES OF ALL PARTNERS TO THIS BID WHEN RETURNED.				
IF YOUR BUSINESS IS A CORPORATION , IN WHICH STATE ARE YOU INCORPORATED?				
IF YOU ARE A STATE EMPLOYEE , INDICATE YOUR POSITION, AGENCY & ADDRESS:				
HAS YOUR BUSINESS RECEIVED FUNDING FROM THE SMALL BUSINESS ADMINISTRATION? <input type="checkbox"/> YES <input type="checkbox"/> NO				
IS YOUR BUSINESS REPORTABLE TO THE IRS ? <input type="checkbox"/> YES <input type="checkbox"/> NO IF YES, A 1099/W2 WILL BE MAILED TO YOU AT YEAR END.				
Remittance Information , if different from above				

CONTRACT FOR CONSTRUCTION RENOVATION
between
SOUTHERN CONNECTICUT STATE UNIVERSITY
and
CONTRACTOR NAME

This Contract for construction renovation services is entered into by and between Southern Connecticut State University (hereinafter "University", "Owner", "Agency" or "State") located at 501 Crescent Street, New Haven, CT 06515 ("campus") and (CONTRACTOR NAME), with a principal place of business at (CONTRACTOR ADDRESS) ("Contractor"). This Contract is pursuant to an award made to the Contractor (BID NUMBER) for the provision of (GENERAL DESCRIPTION OF SERVICES)

1. **ENTIRE AGREEMENT.** This written contract shall constitute the entire agreement between the parties and no other terms and conditions in any document, acceptance or acknowledgment shall be effective or binding unless expressly agreed to in writing by the University. This Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. Therefore the work to be performed pursuant to this Contract will be in accordance with the drawing set entitled (DRAWING TITLE & SCSU Project #) provided by the office of the University Architect, Facilities Management dated (DATE) (incorporated herein by reference and attached hereto as Attachment H). Contractor is responsible to ensure all contractor and subcontractor services are supplied in accordance with the Contract Documents.

- 1.1 In accordance with **Articles #11 and #12** of this Contract, modifications to the Contract Documents (i.e. - Drawing changes) not resulting in an increase in cost beyond the maximum contract value or an increase in the contract term can be negotiated between the parties and agreed to in writing. All other modifications shall require a formal amendment to the Contract executed by both parties and approved by the Office of the Attorney General.

2. **DEFINITIONS.** Whenever the following terms, or pronouns in place of them, are used the intent and meaning shall be as follows:

- 2.1 **ADDITIONAL OR DELETED WORK:** Work required by the University that involves any addition to, deduction from, or modification of the Work required by the Contract Documents.

- 2.2 **AGENCY:** The Agency of the State of Connecticut having administrative authority of the facility in which the Work is being performed. The Agency is Southern Connecticut State University.

2.2.1 Agency Representative: Mr. Peter Visentin
 Director of Facilities Planning and Architectural Services
 Southern Connecticut State University

2.2.2 Project Coordinator: (NAME)
 (TITLE)
 Southern Connecticut State University

- 2.3 **APPLICATION FOR PAYMENT, PARTIAL PAYMENT OR REQUISITION:** Contractor's 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.
- 2.4 **APPROVED:** The term "approved" will be held to the limits of the Project Coordinator's authority as specified in the Contract Documents. In no case shall the Project Coordinator's approval relieve the Contractor of its responsibility to provide a Project constructed in accordance with the Contract Documents. The Project Coordinator's approval shall be for general conformance to the Contract Documents and shall not relieve the General Contractor from its responsibility to accurately determine quantities and to correlate and verify dimensions.
- 2.5 **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.
- 2.6 **CALENDAR DAY:** This is each day of the calendar.
- 2.7 **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.
- 2.8 **CERTIFICATE OF COMPLETION:** A document issued by the Contractor to the Project Coordinator stating that the Contractor has met all contractual obligations.
- 2.9 **CERTIFICATE OF COMPLETION and ACCEPTANCE:** A document issued by the Project Coordinator to the Contractor stating that all Work has been completed and that the Work is accepted by the University.
- 2.10 **CERTIFICATE OF COMPLIANCE:** A document issued to the University by a design professional 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.
- 2.11 **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.
- 2.12 **CERTIFICATE OF SUBSTANTIAL COMPLETION:** A document prepared by the Contractor and approved by the Project Coordinator on the basis of an inspection stating:
- 2.12.1 that the Work, or a designated portion thereof, is determined to be Substantially Complete;
 - 2.12.2 the date of Substantial Completion;
 - 2.12.3 the responsibilities of the University and the Contractor regarding security, maintenance, heat, utilities, damage to the Work and insurance; and
 - 2.12.4 the time within which the Contractor shall complete the remaining work.
- 2.13 **CHANGE ORDER:** Written authorization signed by an authorized University employee, authorizing a modification in the Work, an adjustment in the Contract Sum, or an adjustment in the Contract Time.
- 2.14 **CONSTRUCTION CHANGE DIRECTIVE:** A written authorization signed by an authorized University employee, directing a modification in the Work and stating a proposed basis for adjustment, if any, in the Contract Sum.

- 2.15 **CONTRACT DOCUMENTS OR CONTRACT:** The Agreement between the University and Contractor, Conditions of the Contract (General Conditions, Supplementary Conditions, General Requirements and other Conditions), Project Manual, 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.
- 2.16 **CONTRACT START DATE OR DATE OF COMMENCEMENT OF THE WORK:** The date, specified by the University in the Purchase Order, on which the Contractor is required or approved to start the Work.
- 2.17 **CONTRACT SUM:** The sum stated in the Contract, which is the total amount payable by the University to the Contractor for performance of the Work under the Contract Documents.
- 2.18 **CONTRACT TIME:** The period of time allotted in the Contract Documents for Substantial Completion of the Work, including authorized adjustments thereto. The days specified, calendar or working days, are stipulated in the Bidding Documents.
- 2.19 **CONTRACTOR OR GENERAL CONTRACTOR:** An individual, partnership, firm or Corporation, under direct contract with the University, 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.
- 2.20 **CONTRACTOR'S LIABILITY INSURANCE:** Insurance purchased and maintained by the Contractor that insures the Contractor for claims for property damage, bodily injury or death.
- 2.21 **CONTRACTOR PARTIES:** A Contractor's members, directors, officers, shareholders, partners, managers, principal officers, representatives, agents, servants, consultants, employees or any one of them or any other person or entity with whom the Contractor is in privity of oral or written contract and the Contractor intends for such other person or entity to perform under the Contract in any capacity.
- 2.22 **DAY:** Whenever the word Day is used it shall be understood to mean calendar day or working day as stated on the Bidding Documents, unless stated otherwise.
- 2.23 **EQUAL(S):** A replacement for the specified material, device, procedure, equipment, etc., which has been determined by the Project Coordinator (as deemed necessary) to be substantially identical to the first listed manufacturer or first listed procedure specified in terms of cost, quality, and performance for the Project. The Equal does not constitute a modification in the scope of Work, the Schedule or design intent of the specified material, device, procedure, equipment, etc.
- 2.24. **FIELD ORDER:** A change in the Contract Documents effected and authorized by the Architect/Engineer which does not change the Contract Sum or the time required to complete the Project; nor does it, in the opinion of the Project Coordinator, change the scope of the Project.
- 2.25 **FINAL ACCEPTANCE:** The University's written approval and acceptance of the Work issued to the Contractor upon written certification of Final Completion.

- 2.26 **FINAL COMPLETION:** A written statement by the Contractor to the Project Coordinator that the Work has been completed in accordance with the terms and conditions of the Contract Documents.
- 2.27 **FINAL INSPECTION:** Review of the Work by the Project Coordinator and/or other individuals/officials as deemed necessary to determine whether Final Completion has been achieved.
- 2.28 **FINAL PAYMENT:** The last payment made by the University to the Contractor, made after notice of the Final Acceptance. Payment shall include the entire unpaid balance of the Contract Sum as adjusted by Modifications.
- 2.29 **GENERAL CONDITIONS:** The General Conditions of the Contract for Construction.
- 2.30 **LABORERS:** The term laborers as used herein shall include workmen, workwomen, and mechanics.
- 2.31 **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 University by the Contractor due to the Contractor's failure to complete the Work within the Contract Time.
- 2.32 **LUMP SUM:** An item or category priced as a whole rather than broken down into its elements.
- 2.33 **MINOR CHANGES IN THE WORK:** Changes in the Work not involving an adjustment in the Contract Sum and not inconsistent with the intent of the Contract Documents, which shall be affected by written order issued by the Project Coordinator.
- 2.34 **MODIFICATION OR AMENDMENT:**
- 2.34.1 A written change to the Contract Documents.
 - 2.34.2 A Change Order.
 - 2.34.3 A Construction Change Directive.
 - 2.34.4 Supplemental Instructions for minor changes in the Work and/or additional instructions to the Work.
- 2.35 **NOTICE TO BIDDER:** A notice contained in the Bidding Document informing prospective Bidders of the opportunity to submit Bids on a Project.
- 2.36 **NOTICE TO PROCEED:** Written notice issued by the University to the Contractor in the form of a Purchase Order, authorizing the Contractor to proceed with the Work and may also establish the date for commencement of the Contract Time.
- 2.37 **OWNER:** The individual, partnership, firm, corporation or other business organization who owns the property affected by the construction project.
- 2.38 **PAYMENT BOND, LABOR BOND OR MATERIAL BOND:** A bond in which the Contractor and the Contractor's surety guarantee to the University that the Contractor will pay for labor and materials furnished for use in the performance of the Contract, as required by Conn. Gen. Stat. § 49-41.

- 2.39 **PERFORMANCE BOND OR SURETY BOND:** A bond in which the Contractor and the Contractor's surety guarantee to the University that the Work will be performed in accordance with the Contract Documents, as required by Conn. Gen. Stat. § 49-41.
- 2.40 **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.
- 2.41 **PLANS OR DRAWINGS:** All drawings or reproductions of drawings pertaining to the construction of the Work contemplated and its appurtenances.
- 2.42 **PRODUCT DATA:** All data containing the manufacturer's product information, which shall include but is not limited to Material Safety Data Sheets ("MSDS") and recommended installation practices.
- 2.43 **PROJECT:** The total construction of which the Work performed under the Contract Documents may be the whole or a part. **PROJECT TITLE & SCSU PROJECT NUMBER**
- 2.44 **PROJECT COORDINATOR:** The University representative authorized to oversee the fulfillment of all requirements of the Contract Documents.
- 2.45 **PROJECT MANUAL:** The set of documents assembled for the Work which includes, but is not limited to, Contract Documents, Bidding Requirements, Sample Forms, Conditions of the Contract, General Requirements, and the Specifications.
- 2.46 **PROJECT SUPERINTENDENT:** The Contractor's representative authorized to oversee all requirements of the Project.
- 2.47 **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 University.
- 2.48 **PURCHASE ORDER:** A document issued by the University to the Contractor, authorizing the Contractor to proceed with the Work.
- 2.49 **RECORD DOCUMENTS OR AS-BUILT DRAWINGS:** Construction Drawings revised to show all significant Modifications made during the construction process.
- 2.50 **RECORDS:** All working papers and such other information and materials as may have been accumulated by the Contractor in performing the Contract, including but not limited to, documents, data, plans, books, computations, drawings, specifications, notes, reports, records, estimates, summaries and correspondence, kept or stored in any form.
- 2.51 **SAMPLE:** A physical portion of the specified product.
- 2.52 **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 and their relationship to Substantial

Completion and Final Completion of the Work, rendered in a form permitting determination of the optimum sequence and duration of each operation.

- 2.53 **SCHEDULE OF VALUES:** A document furnished by the Contractor to the Project Coordinator and the University 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.
- 2.54 **SECONDARY SUBCONTRACTOR:** An individual, partnership, firm or Corporation under direct contract with the Subcontractor to the General Contractor.
- 2.55 **SHOP DRAWINGS:** Drawings provided to the Project Coordinator and the University 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.
- 2.56 **SITE:** All the area(s) bounded by the Contract Limit Lines of this Project. If no Contract Limit Lines are specified, the Site(s) shall be defined as the area(s) of and in the immediate vicinity of the Work, as defined by the Project Coordinator.
- 2.57 **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.
- 2.58 **SUBCONTRACTOR:** A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a separate contractor or subcontractors of a separate contractor.
- 2.59 **SUB-SUBCONTRACTOR:** A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.
- 2.60 **SUBMITTALS:** Documents including, but not limited to, samples, manufacturer's data, shop drawing, or other such items submitted to the University and Project Coordinator by the Contractor for the purpose of approval or other action, as required by the Contract Documents.
- 2.61 **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 so the University can occupy or utilize the Work for its intended use.
- 2.62 **SUBSTITUTION:** A material, device, procedure, equipment, etc., which has been determined by the Project Coordinator and the University to be not an Equal to the first manufacturer or procedure listed in the Specification in terms of cost, quality and performance but which may be used in place of that item specified. The Substitution may constitute a modification in the Work, the Schedule or the design intent of the specified material, device, procedure, equipment, etc. at the sole discretion of the Project Coordinator.
- 2.63 **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.

- 2.64 **SUPPLEMENTARY CONDITIONS:** An extension of the General Conditions applicable to any and all portions of Work under the Contract Documents.
- 2.65 **THRESHOLD LIMIT BUILDING:** Any proposed (new) structures or additions as defined by the Connecticut General Statutes Section 29-276b.
- 2.66 **UNIT PRICE:** The monetary value stated by the University or the Contractor, as a price per unit of measure for materials or services as described in the Contract Documents and/or Bidding Documents.
- 2.67 **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.
3. **ORIGINAL PROJECT DETAILS/SCOPE OF WORK.** The Contractor agrees and is authorized to supply the University with the following services, equipment, and/or supplies; and the University agrees to utilize Contractor for such services:
- 3.1 Contractor shall provide service and materials, by qualified tradesmen including but not limited to Electricians, Masons, Painters, Plumbers, and other tradesmen as required, in the fulfillment of the Job Specifications summarized as (but further delineated/clarified in the documents incorporated herein as set forth in this Contract as Attachment H):
4. **CONDITIONS OF WORK**
- 4.1 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 University 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.
- 4.2 The Contractor shall report to the Project Coordinator all errors, inconsistencies or omissions discovered. The Contractor shall not be liable to the University 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 Project Coordinator. If the Contractor performs any Work knowing it involves an error, inconsistency or omission in the Contract Documents without notice to the Project Coordinator, 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.
- 4.3 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 Work. Errors, inconsistencies or omissions discovered shall be reported to the Project Coordinator 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.

- 4.4 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 University operating at the Site.
- 4.5 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.
- 4.6 The Contractor shall perform the Work in accordance with the Contract Documents and approved Submittals.

5. CORRELATION OF CONTRACT DOCUMENTS

- 5.1 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 of conflict occur in the Contract Documents it is adjudged the Contractor shall have included the most restrictive and/or costly solution in its bid.
- 5.2 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 Project Coordinator, 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 University. The Contractor's failure to provide immediate notice shall mean the Contractor will not be entitled to any additional compensation, either monetary adjustment, with respect to any discrepancy.
- 5.3 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.
- 5.4 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.
- 5.5 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.

6. COMMENCEMENT AND PROGRESS OF WORK

- 6.1 All Contractor and Subcontractor employees shall hold current appropriate licenses and/or certifications, including but not limited to all journeymen tradesmen, and apprentices must be registered with the State of Connecticut.
 - 6.1.1 Tradesmen shall be required to provide all tools and other equipment normally associated with their trade.
 - 6.1.2 Tradesmen shall be fully qualified and experienced in all aspects of the trade and will be required to perform highly skilled tasks in accordance with national and local codes and standard trade practices.

- 6.2 Prior to the start of Work, Contractor must provide the following documents in accordance with **Article 44**: Proof of Insurance covering Public Liability and Workers' Compensation (Form #Accord 25-S reflecting State-required limits); Performance Bond (Form PW-25 or similar); and Labor and Materials Bond (Form PW-6 or similar).
- 6.3 The Contractor shall begin work under this Contract on the Project Start Date as indicated herein, and only after the approval of a formal contract and University's issuance of a Purchase Order for the Project. All work must be performed in a safe manner. If any shutdown of services is required, the Contractor must contact the Project Coordinator prior to shutdown. The Contractor shall complete all the Work necessary for Final Completion, including but not limited to Substantial Completion, Contract close-out, testing and demonstration of all systems as required for acceptance, punchlist Work, Site cleanup, training and submission of Record Documents, manuals, guarantees and warranties as stated in the Bidding Document.
- 6.4 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.
- 6.5 The Contractor's early completion schedule notwithstanding, the University reserves the right to order Modifications to the Work at any time during the Contract Time.
- 6.6 The Contractor shall not be entitled to costs for delay due to the University 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. Costs include, but are not limited to, delays, extended home or field office costs, supervisory and management costs incurred in performance of the Work. Early completion of the Work shall not merit additional compensation.
- 6.7 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 University'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 University 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 Project Coordinator.
- 6.7.1 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.
- 6.8 The Contractor acknowledges that the Contract Sum 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.
- 6.9 Any extension of the Contract Time shall be by Change Order pursuant to Article 11.

- 6.9.1 The Contract Time is the number of calendar days, allotted in the Bidding Documents, for execution and Substantial Completion of the Work, including authorized adjustments thereto. The Contract Time is the sum of all working and non-working calendar days.
- 6.9.2 If weather conditions prevent the Contractor from executing the Work, the Contract Time may be extended by Change Order, for such reasonable time as may be determined by the University.

7. SUBMITTALS, PRODUCT DATA, SHOP DRAWINGS AND SAMPLES

- 7.1 Contractor shall review, approve and submit to the Project Coordinator all Submittals including but not limited to Product Data, Shop Drawing and Samples, with such promptness as to cause no delay in the Work.
- 7.2 Correction or approval of such Submittals, Shop Drawings, Product Data, and Samples will be made with reasonable promptness by the Project Coordinator. 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 Project Coordinator's written approval.
- 7.3 No Work governed by such drawings, schedules or samples shall be fabricated, delivered or installed until approved by the Project Coordinator.
- 7.4 No damages for delays or time extensions will be granted even if approvals deviate from the approved Schedule.

8. AUTHORITY OF THE PROJECT COORDINATOR

- 8.1 The Project Coordinator employed by the University is authorized to inspect all Work for conformance to the Contract Documents. The Project Coordinator 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.
- 8.2 The Project Coordinator shall in no case act as foreman or perform other duties for the Contractor, nor shall the Project Coordinator interfere with the management of the Work by the Contractor. Any advice, which the Project Coordinator may give the Contractor, shall in no way be construed as binding the University in any way, nor releasing the Contractor from the fulfillment of the terms of the Contract.
- 8.3 In any dispute arising between the Contractor and the Project Coordinator with reference to inspection and rejection of the Work, the Project Coordinator may suspend work on the noncompliant portion of the Work until the dispute can be referred to and decided by the University.

9. SEPARATE CONTRACTS

- 9.1 The University reserves the right to perform Work in connection with the Contract, 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 8** herein.

- 9.2 Contractors working in the same vicinity shall cooperate with one another and, in case of dispute, decision of the University shall be final and binding to all Contractors involved, including Contractors under separate Contracts.
- 9.3 The Contractor shall assume all liability, financial or otherwise, in connection with this Contract and shall protect and hold harmless the University and the State of Connecticut 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 University and the Contractor, the Contractor shall bear such loss.
- 9.4 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.
- 9.5 In no event shall the University be responsible for any claim for damages that are the result of the Contractor's failure to coordinate the work with any Contractor or Subcontractor.

10. CONSTRUCTION SCHEDULES

- 10.1 Within seven (7) days of the University's issuance of a purchase order, the Contractor shall submit to the Project Coordinator three (3) copies of a Construction Schedule for this Project. The Schedule shall be in bar chart form and shall include all aspects of the work, the interrelationship of the various trades and the critical path of the job. The schedule shall include a timeline for the submission, review and approval of shop drawings for critical path items and delivery and installation dates for those same critical path, or long lead time items, (such as electrical transformers and elevator). The Schedule shall coincide with the Contractor's approved Schedule of Values. The Schedule shall indicate a completion date in advance of the date established for Substantial Completion. The Schedule shall be acceptable to the Architect/Engineer and the Project Coordinator. It shall be revised and reissued at the beginning of every month for the duration of the project. This monthly update progress Schedule shall include a summary comparison of the original schedule and the latest updated schedule (previous month) showing all activity description and dates. These comparison schedules shall be in the form of a summary bar chart, an activity listing report and actual to target comparisons. The reports may include critical activities, float time, duration of each activity, dates of each activity and the network logic (including successors and predecessors of each activity). Failure to provide the Architect/Engineer, or the Project Coordinator with an acceptable, revised Schedule, within seven (7) days of the receipt of a written request, may result in the withholding of the Contractor's monthly progress payments until such a Schedule is received.
- 10.2 Phasing: The Contractor shall include, as part of the Construction Schedule, all proposed phasing for execution of the work. The phasing must incorporate all aspects of the work and shall reflect coordination with any concurrent projects by the University, and any partial occupancy requirements of the University.

11. CHANGE ORDERS

- 11.1. At any time, without invalidating the Contract and by a written order and without notice to the sureties, the University may order changes in the Work consisting of additions, deletions or other revisions. Upon request, the Contractor shall supply the Project Coordinator promptly with a detailed proposal for the same, showing quantities of and unit prices for its Work and that of any subcontractor involved.
- 11.2. All such changes in the Work shall be authorized by a properly executed change order, or if necessary to expedite the Work, a field order, approved by the Project Coordinator shall be executed under all provisions of the Contract Documents. Upon receipt of the field order, the Contractor shall proceed with the Work when and as directed.
- 11.3. If such changes make the Work less expensive for the Contractor, the proper deductions shall be made from the Contract Sum. The deductions shall be computed in accordance with the provisions listed in **Article 11.5.2** or in the event none of the provisions of **Article 11.5.2** are applicable than by the value as estimated by the University.
- 11.4. The Contractor and the University agree that the time specified in **Articles 31 and 32**, for the performance of this Contract shall include not only the Work of the Original Contract but any additional work ordered by the University which, in the opinion of the Project Coordinator, can be performed concurrently with the Original Work specified. Therefore, no extension of time will be granted for such work.
- 11.5. The amount of compensation to be paid to the Contractor for any additional work so ordered shall be determined in one of the following manners:
- 11.5.1. By unit prices stated in the Contract Documents, or subsequently agreed upon.
- 11.5.2. By a lump sum agreed upon by the University and the Contractor, computed as follows:
- 11.5.2.1. The total cost of labor performed, plus or minus material used and the cost of rented equipment used exclusively on the work specified in the subject Change Order, by the subcontractor or the Contractor's own forces. The cost of labor and all fringe benefits are specified for each trade in the most current State "Prevailing Wage Rates and Holiday Schedule" which shall be superseded by the Schedule issued for this Project.
- 11.5.2.2. Plus or minus the taxes imposed by law on labor, which shall equal the total cost of Gross Pay for Prevailing Rates (Base Rate per Hour plus Taxable Cash Benefits per Hour) times the Contractor's established percentage rate for Workers' Compensation Insurance, Federal Social Security and Medicare, (FICA), Connecticut Unemployment Compensation, Federal Unemployment Tax Act.
- 11.5.2.3. Plus or minus the Contractor's, or Subcontractor's, allowance for overhead and profit, (OH&P), applied to the cost of labor, materials and taxes for work performed by its, or their, own forces, as specified below.
- 11.5.2.3.1. For change orders up to and including \$5,000 – 0% OH&P.
- 11.5.2.3.2. For change orders from \$5,001 to \$15,000 – 17% OH&P.
- 11.5.2.3.3. For change orders from \$15,001 to \$25,000 – 15% OH&P.
- 11.5.2.3.4. For change orders from \$25,001 and up – 12% OH&P.
- 11.5.2.4. On all change order work performed solely by its Subcontractors, the General Contractor shall be allowed a 6% markup for its overhead and profit on the total cost of

the Subcontractor's work. The total cost of the Subcontractor's work will include the Subcontractor's overhead and profit.

- 11.5.2.5. The University recognizes a markup for overhead and profit by a Subcontractor to the General Contractor on its own work. No markups will be recognized on work performed by secondary subcontractors performing work for a Subcontractor.
- 11.5.2.6. Changes involving both cost and credit must be submitted in a singular request. The net cost, or credit, shall be computed before the percentage allowed for overhead and profit is applied. If the work to be performed results in a credit to the University, the specified percentage allowed (resulting in additional credit) for OH&P shall be forfeited by the University.
- 11.5.2.7. Bond cost for the total of project Change Orders may be submitted as a separate and final Change Order request upon submission to the University of written documentation from the bond company.
- 11.5.2.8. The Contractor shall, when requested, promptly furnish in a form acceptable to the Architect/Engineer, itemized statements of the cost of the work specified in Change Orders. These statements shall include, but shall not be limited to, certified payrolls and copies of accounts, bills, vouchers, proof of Unemployment Tax/Workmen Compensation/Health-Pension rates, Union Wage Agreements, apprentice documentation and bond premium increase documentation as required to substantiate the cost of the Change Order in question.
- 11.5.2.9. All Change Order proposals must be submitted by the Contractor and Subcontractor on a Change Order Proposal Worksheet form approved by the University. Contractor Change Order Proposal Worksheet (incorporated herein by reference and attached hereto as Attachment E) and Subcontractor Change Order Proposal Worksheet (incorporated herein by reference and attached hereto as Attachment F).

11.6. If unit prices are not applicable and the parties cannot agree upon a lump sum, the University may direct the Architect/Engineer to order that the work be done by issuing the Contractor a Change Order. The University and the Architect/Engineer shall determine what they believe to be fair and equitable compensation for the Contractor, in accordance with the provisions specified above for change orders. The Contractor then must proceed with the work. However, the Contractor may do so "under protest" and make a claim for an increase in the Contract Amount and/or Time, as specified below.

11.7. If the Contractor wishes to make a claim for an increase in the Contract Sum, because of damage the Contractor feels has been incurred as a result of changes in the Work ordered by the University, the Contractor shall give the Project Coordinator written notice thereof within seven (7) Calendar Days after the occurrence of the event giving rise to such a claim. No such claim shall be valid unless the notice is in writing. The Contractor shall then file, with the Project Coordinator, daily itemized statement of what the Contractor believes is the actual cost of the work ordered to be performed.

11.8. The provision stated above, shall not affect the power of the Contractor to act in case of an emergency posing a threat of injury to persons, or damage to the Work or property. Subsequent to the action taken by the Contractor; the Project Coordinator shall issue a change order in the amount the Contractor adjudges to be the reasonable cost of such work.

12. DELETED WORK

12.1. Without invalidating any of the terms of the Contract, the University may order deleted from the Contract any items or portions of the Work deemed unnecessary by the University.

12.2. 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 11.5.2** or in the event none of the provisions of **Article 11.5.2** are applicable than by the value as estimated by the University.

13. **MATERIALS: STANDARDS, EQUALS & SUBSTITUTIONS.** Contractor shall guarantee the goods and services against defective material or workmanship and to repair any damage or marring occasioned in transit or replace them, at the University's option.

13.1. 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.

13.2. 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 University 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 University as an exception.

13.3. Written requests for any Equal or Substitution shall be submitted, with the appropriate documentation, as detailed in the Contract Documents, to the Project Coordinator. All requests will be compared to the first manufacturer or first procedure listed in the specific Specification 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 and cost. All submissions must include all the required data for the first listed manufacturer or procedure as specified, as well as the proposed Equal or Substitution. The submission of all Equals or Substitutions to those specified must be made within the days listed below after the contract start date. After that time period, the Contractor shall provide what is specified unless otherwise allowed within the sole discretion of the University. Written requests for the substitution of a proposed Equal to a specified item must be made within thirty (30) Calendar Days of the University's issuance of a Purchase Order. No substitution will be considered after the thirty day time period.

13.4. Contractor shall submit each request for Equal or Substitution to the Project Coordinator who shall review each request and make the following recommendations to the University:

13.4.1. Acceptance or non-acceptance of the adequacy of the submission and required back-up,

13.4.2. Determination of the category of the request for Substitution or Equal, and

13.4.3. 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 University.

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

- 13.6. 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 University when a Contractor submits a request for Substitution or Equal, whether such request be approved or denied.
- 13.7. 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.
- 13.8. The Contractor shall purchase no materials or supplies for the Work which are 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.
- 13.9. All products and systems supplied to the State as 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.

14. INSPECTION AND TESTS

- 14.1 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 University and/or any authorities having jurisdiction.
- 14.2 All material and workmanship, if not otherwise designated by the Specifications, shall be subject to inspection, examination and test by the University 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 University 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 University 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 University.
- 14.3 Without additional cost to the University, 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.
- 14.4 If, at any time before Final Completion and Final Acceptance of the Work, the University considers it necessary or advisable to examine 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 University, 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 University 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, re-testing or re-inspecting, services of required consultants, additional supervision, the University's and the Project Coordinator's administrative costs, and other costs for services of other consultants.

15. ROYALTIES AND PATENTS

- 15.1 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 University.
- 15.2 The Contractor shall indemnify and hold harmless the University, Project Coordinator, and the State of Connecticut 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 Completion of the Work.

16. LICENSES, PERMITS AND REGULATIONS

- 16.1 All work performed under this contract shall be carried out only by the, Contractor, Subcontractors and/or workmen who possess, at the time the bid is submitted, and for the entire duration of the project, a valid trade license, specific to the trade performed, issued by the State of Connecticut Department of Consumer Protection in accordance with Conn. Gen. Stat. §§ 20-330 through 20-334, as amended, and with the pertinent regulations and requirements of the Occupational and Professional Licensing Division of the State of Connecticut Department of Consumer Protection
- 16.2 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.
- 16.3 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.
- 16.4 If underground utilities may involve part of the Work, the Contractor shall obtain the services of a qualified underground utility locating firm, at no cost to the University, to verify locations of underground utilities, to provide safety, protect the Work and protect the workmen as necessary to perform the Work.

17. PROTECTION OF THE WORK, PERSONS AND PROPERTY. The Contractor shall exercise all reasonable care to avoid damage to the property being made ready for the state's use, and to any and all property adjacent to any work site. Contractor shall promptly report any damage, regardless of cause, to the University. Contractor shall at its sole expense immediately correct any dangerous condition caused by or as a result of the Contractor's work.

- 17.1 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 University.
 - 17.1.1 Contractor shall be held solely responsible for any damage to existing structures, systems, equipment and/or site caused by Contractor or its employees and/or

subcontractor and shall repair or replace same to its original condition at no additional cost to the University.

- 17.2 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.
 - 17.3 The Contractor shall take all necessary precautions for the safety of employees on the Work site 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" a copy of which can be provided by the Project Coordinator, the standards of the Connecticut Labor Department, and the Occupational Safety and Hazard Association (OSHA).
 - 17.4 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, the Contractor, and the public, and shall post danger signs warning against any dangerous condition or hazard created by such things as (but not limited to) protruding nails, well holes, elevator hatchways, scaffolding, window openings, excavations, tripping or slipping hazards, stairways and falling materials.
 - 17.5 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 University by the Contractor at the commencement of the Contract.
 - 17.6 The Contractor shall at all times protect excavation, 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.
 - 17.7 The Contractor shall construct and maintain all necessary temporary drainage and do all pumping necessary to keep excavation, basements, footings and foundations free of water.
 - 17.8 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.
 - 17.9 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.
 - 17.10 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 University.
18. **TEMPORARY UTILITIES.** Temporary utilities required for the completion of the project shall be provided by the University at no cost to the Contractor. Temporary utilities shall include but are not limited to lighting, heating, cooling, electrical power, water, telephone, sanitary facilities, and potable water.

19. CORRECTION OF WORK

- 19.1 The Contractor shall promptly and without expense to the University remove from the premises all materials rejected by or unacceptable to the University as failing to conform to the Contract Documents, whether incorporated in the Work or not.
- 19.2 The Contractor shall promptly and without expense to the University 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.
- 19.3 If the Contractor, after receipt of notice from the University, shall fail to remove such rejected or unacceptable materials within a reasonable time as fixed in said notice, the University may remove and store such materials at the expense of the Contractor.
- 19.4 Such action shall not affect the obligation of the Contractor regarding replacement 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 University 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 University, shall be equitable.
- 19.5 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 University, shall be completed within 30 days of the established Substantial Completion date.
- 19.6 Final Payment shall not relieve the Contractor of responsibility for the defects in material or workmanship.
- 19.7 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 twelve (12) 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.

20. CUTTING, FITTING, PATCHING AND DIGGING

- 20.1 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 University and in accordance with the Plans and Specifications.
- 20.2 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 University, neither the Contractor nor any of its Subcontractors shall cut or alter the Work of any other Contractor or Subcontractor.

21. CLEANING UP

- 21.1 The Contractor shall, on a daily basis, keep the premises free from accumulations of waste material or rubbish.
- 21.2 Prior to Final Completion of the Work, the Contractor shall remove from and about the site of the Work, all rubbish, dumpsters, and all temporary structures; tools, scaffolding and surplus materials, supplies and equipment which may have been used in the performance of the Work. If the University in their sole discretion determines that the Contractor has failed to clean the work site, the University may remove the rubbish and charge the cost of such removal to the Contractor. A deduct Change Order will be issued by the University to recover such cost.

22. ALL WORK SUBJECT TO CONTROL OF THE UNIVERSITY

- 22.1 The University hereby declares that the Project Coordinator (or the Project Coordinator's designee) is the University's only authorized representative to act in matters involving the University's ability to revoke, alter, enlarge or relax any requirement of the Contract Documents; and act on behalf of the University.
- 22.2 In no event may the Contractor act on any instruction of the University without written consent of the Project Coordinator. 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 Project Coordinator.
- 22.3 In the performance of the work, The Contractor shall abide by all orders, directions, and requirements of the Project Coordinator at such time and places and by such methods and in such manner and sequence as the Project Coordinator may require.
- 22.4 The Project Coordinator 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.
- 22.5 The Contractor shall employ no plant, equipment, materials, methods or persons to which the Project Coordinator objects and shall remove no plant materials, equipment or other facilities from the site of the Work without the permission of the Project Coordinator. Upon request, the Project Coordinator shall confirm in writing any oral order, direction, requirement or determination.

23. FOREIGN MATERIALS

- 23.1 Preference shall be given to articles or materials manufactured or produced in the United States, conditions of quality and price with duty being equal.
- 23.2 Only domestic articles or materials will be used unless a statement is submitted with the proposal that enumerates the foreign articles of materials proposed to be used and such proposal is accepted by the University. The foregoing provisions shall not apply to foreign articles or materials required by the Contract Documents.

24. HOURS OF WORK

- 24.1 "Normal" work hours are between the hours of 7:00 a.m. to 4:30 p.m., Monday through Friday. The Contractor shall perform all work on the project during "normal" work hours except as provided below.

- 24.2 The Contractor may work outside “Normal” work hours if, in the Contractor’s judgment, such work is necessary to meet the Substantial Completion deadline for the project. The Contractor may perform such work only with prior written consent by the University. The Contractor must notify the Project Coordinator at least 24 hours in advance of any such proposed work. The Contractor must comply with all testing, inspection, surveying and supervision requirements outlined elsewhere in these Contract Documents. The Contractor shall bear all responsibility for any costs associated with working outside normal work hours, including but not limited to, premium labor costs for workmen, University personnel, engineering personnel or test lab personnel.
- 24.3 When working outside “normal” work hours, the Contractor may not undertake any work that may disturb dormitory or neighborhood residents or occupants of adjacent buildings. The Contractor shall perform no work on any Sunday before the hour of 12:00 noon.
- 24.4 The Contractor shall inform the University, in writing, of work hours to be employed on the project in accordance with the above guidelines.

25. **DAYS OF WORK**

- 25.1 Working Calendar Days include all days that the Contractor is permitted to execute the Work or employ any person to execute the Work within the Contract Time.
- 25.2 Non-working Calendar Days include all Saturdays, Sundays, Legal State Holidays and any other days identified in the Contract Documents that the Contractor is not permitted to execute the Work or employ any person to execute the Work. The restriction of non-working Calendar Days may be suspended upon the approval or direction of the University.

26. **ADDITIONAL CONTRACTOR RESPONSIBILITIES**

- 26.1 Contractor shall be responsible for the entire performance under this Contract, regardless of whether the Contractor itself performs.
- 26.2 The Contractor represents and warrants the following to the Owner (in addition to the other representations and warranties contained in the Contract Documents) as an inducement to the Owner to execute the Contract Documents, which representations and warranties shall survived the execution and delivery of the Contract Documents and the final completion of the Work;
- 26.2.1 That it is financially solvent, able to pay its debts as they mature and possesses sufficient working capital to complete the Work and perform its obligations under the Contract Documents;
- 26.2.2 That it, through its Subcontractors or otherwise, is able to furnish the plant, tools, materials, supplies, equipment and labor required to complete the Work and perform its obligations hereunder and has sufficient experience and competence to do so;

- 26.2.3 That it is authorized to do business in the state where the Project is located and properly licensed by all necessary governmental and public and quasi-public authorities having jurisdiction over it and over the Work and the Site of the Project;
 - 26.2.4 That its execution of the Contract Documents and its performance thereof have been duly authorized by all necessary corporate action; and
 - 26.2.5 That its duly authorized representative has visited the Site of the Work, familiarized himself with the local conditions under which the Work is to be performed and correlated his observations with the requirements of the Contract Documents.
- 26.3 Contractor shall be the sole point of contact concerning the management of this Contract, including performance and payment issues.
- 26.4 Contractor shall be solely and completely responsible for adherence by the Contractor Parties to all applicable provisions of this Contract.
- 26.5 The Contractor will submit a resume for the proposed Project Superintendent and all other pertinent information required to obtain the University's written approval of the Project Superintendent. The Project Superintendent will be approved by the University and will be on the Site whenever scheduled or significant work is being performed. The Contractor will not change the Project Superintendent without the written consent of the University. The Project Superintendent will attend all scheduled project meetings. The Contractor will list "Field Supervision" as a separate line item on the Schedule of Values. The University reserves the right to withhold money from the Contractor's monthly Application for Payment for any unauthorized deviation from the full-time supervision requirement set forth above.
- 26.6 The University shall closely monitor the individual actions of the Contractor's employees and Subcontractor(s) employees. Any and all instances of damage or lack of concern for state property will be aggressively investigated to determine safe methods for eliminating damage to state property up to and including the removal of the Contractor's employee or Subcontractor(s) employee responsible for the damages from the campus. The University's Police Department and Facilities Management Department shall investigate all actions involving the Contractor's and Subcontractor(s)' employees and State Property damages in accordance with this Contract. The Contractor shall be responsible for reimbursing the University for all damage caused by its and Subcontractor(s) employees.
- 26.7 Contractor shall comply with all applicable federal, state and municipal laws, ordinances, building, and construction codes. Contractor shall insure that all of its employees, Subcontractor(s) and subcontractor employees shall acquire and possess all required permits and licenses. Contractor shall be responsible for the payment of all fees associated with these permits, licenses and inspections.
- 26.8 Contractor is expected to understand and follow all of the University's Office of Environmental, Health and Safety policies. The Contractor is expected to meet with the Director of the University's Office of Environmental Health and Safety prior to commencing work or as required.

27. **PROFESSIONAL STANDARDS.** In rendering services under this Contract, the Contractor shall conform to high professional standards of work and business ethic. The Contractor warrants that the services shall be performed: 1) in a professional and workmanlike manner; and 2) in accordance with generally and currently accepted principles and practices. During the term of this Contract, the Contractor agrees to provide to the University in a good and faithful manner, using its best efforts and in a manner that shall promote the interests of the University, such services as the University requests, provided in the Contract.

28. **GUARANTEES AND WARRANTIES**

- 28.1 Unless expressly provided for otherwise in the Contract Documents, the Contractor shall provide a warranty on the Work for a 12-Month period from the date of Substantial Completion. The Contractor shall warrant that the equipment, materials and workmanship are new and of good quality, 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. Contractor shall complete and submit to the Project Coordinator a written University provided guarantee/warranty. (incorporated herein by reference and attached hereto as Attachment C).
- 28.2 Disclaimers and limitations from manufacturers, Subcontractors, suppliers or installers to the Contractor shall not relieve the Contractor of the Warranty on the Work.
- 28.3 Contractor shall neither disclaim, exclude, nor modify the implied warranties of fitness for a particular purpose or of merchantability relating to the fulfillment of any portion of this Contract.

29. **USE OF SUBCONTRACTORS**

- 29.1 In order to complete the Work and obligations under this contract, it may be necessary for the Contractor to hire subcontractors to complete specific portions of the Work. 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.
- 29.2 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.
- 29.3 Contractor may enter into subcontract(s), subject to this **Article 29**, to perform the work required under this Contract. Contractor shall provide a list of all subcontractors to the University that will be used under this Contract. The Contractor shall supply the Project Coordinator with a Subcontract Agreement Form (incorporated herein by reference and attached hereto as Attachment G).
- 29.4 The use of a Subcontractor(s) shall not relieve the Contractor of any responsibility of liability under this Contract.
- 29.5 If Subcontractors are required to complete any portion of the Work under this Contract, the Subcontractor's identity and services to be rendered shall be included in this Contract and listed below. Notwithstanding the execution of this Contract prior to a specific subcontractor

being identified or specific costs being set, no Subcontractor may be used or expense under this Contract incurred prior to identification of the Subcontractor or inclusion of a detailed budget statement as to subcontractor expense, unless expressly provided in this Contract.

29.5.1 List of Subcontractors

No Subcontractors are required to complete the Work under this Contract.

OR

Company Name	Description of Work	Amount
--------------	---------------------	--------

- 29.6 No Subcontractor shall acquire any direct right of payment from the University by virtue of the provisions of this clause or any other clause of this Contract.
- 29.7 The Contractor shall make available copies of all subcontracts to the University upon request.
- 29.8 The Contractor shall not contract with a person or entity who appears on the State of Connecticut Debarment List, the Federal Davis Bacon Act Debarment List, both of which are available through: <http://www.ctdol.state.ct.us/> or the Federal List of Excluded Parties Listing System available through <http://epls.arnet.gov/> or who is party to a legal dispute with the State of Connecticut.
- 29.9 If the University or Project Coordinator has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the University or Project Coordinator has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work and is not ineligible to be contracted with, the Contract Sum shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.
- 29.10 The Contractor shall not substitute a Subcontractor, person or entity (including those who are to furnish materials or equipment fabricated to a special design) previously selected if the Owner or Architect makes reasonable objection to such substitution.
- 29.11 As set forth more fully in the Notice and Instructions to Bidders, if the value of the masonry, electrical, mechanical (other than HVAC) and HVAC work each exceeds \$25,000, the Contractor may be required to list the names and prices of Subcontractors for masonry, electrical, mechanical other than HVAC, and HVAC work, as well as other Subcontractors or as may be required by the Bid Documents. Substitution of a Subcontractor for one named in the Bid Document, or substitution of a Subcontractor for any designated sub trade work bid to be performed by the Contractor's own forces, shall not be permitted, except for good cause. The term "good cause" includes but is not limited to a Subcontractor's or where appropriate, Contractor's: (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 bonds shown on the Proposal Form; (5) inability to obtain, or loss of, a license necessary for the performance of a 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, as set forth in the Bid Documents.

- 29.12 By appropriate agreement, written where legally required for validity, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, which the Contractor, by these Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.
- 29.13 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that
- 29.13.1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section **14.2** and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor in writing; and
 - 29.13.2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.
 - 29.13.3 When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract. Contractor agrees to execute any and all other documents reasonably required to effect the assignment.
- 29.14 Upon such assignment, if the Work has been suspended for more than thirty (30) days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.
- 29.15 Upon such assignment to the Owner under this **Article 29**, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.
- 29.16 The Contractor shall promptly advise the Owner in writing of any claim or demand by a Subcontractor claiming that any amount is due to such Subcontractor or claiming any default by the Contractor in any of his obligations to such Subcontractor.

30. CONTRACTOR'S STANDARDS OF CONDUCT

- 30.1. In order to insure the orderly and efficient performance of duties and services at the University and to protect the health, safety and welfare of all members of the University community the Contractor agrees that the following items are strictly prohibited while performing services under this Contract:

- 30.1.1. Use or possession of drugs or alcohol;
 - 30.1.2. Possession of firearms or illegal weapons anywhere on campus property including vehicles;
 - 30.1.3. Smoking in buildings;
 - 30.1.4. Harassment (sexual, racial or otherwise) or intimidation of anyone on the premises of the campus;
 - 30.1.5. Violation of applicable traffic or public safety regulations or of the University rules and procedures;
 - 30.1.6. Unauthorized use of The University vehicles, equipment or property;
 - 30.1.7. Use of University telephones for personal business;
 - 30.1.8. Removal or theft of University property;
 - 30.1.9. Unauthorized duplication or possession of University keys;
 - 30.1.10. Transfer of personal identification card or of parking pass to unauthorized personnel;
 - 30.1.11. Conduct or behavior that endangers the health, safety and welfare of any member of the public or of the University community;
 - 30.1.12. Interference with the work of other employees;
 - 30.1.13. Work attire other than the specified uniform; and
 - 30.1.14. Loud, vulgar behavior or the use of profanity.
- 30.2. The Contractor shall be responsible for conducting a worldwide background check including social security number verification; identity check; criminal arrests, convictions, and warrants; Sex Offender Registry status; and a motor vehicle check on all individuals it plans to assign to work on the University's campus. The Contractor shall screen individuals based on the results of their background checks prior to assigning them to work on the University's campus. For those individuals whom the Contractor has assigned to work on the University's campus, the Contractor shall provide a designated University administrator with access to their background checks a minimum of two weeks prior to the beginning of their work assignments at the University.
- 30.3. Violation of Standards: Contractor will require its employees and Subcontractors to comply with the standards listed in Articles 30.1 and 30.2 above. The University may, at its discretion, recommend discharge of any employee of the Contractor found to be in violation of the standards listed in Articles 30.1 and 30.2 above, or in violation of any law or standards adopted by the University from time to time, as required, to protect the health, safety and welfare of the University community. Upon request of the University, Contractor shall remove any of its employees that violate said standards from assignments to be performed under this Contract.
- 30.4. The University shall provide pictured identification ("ID") badges for all of the Contractor's employees. Contractor shall require their employees to wear ID badges at all times while performing services under this Contract.
- 30.5. Contractor shall employ only those individuals of good moral character and with a technical knowledge of their duties sufficient to properly carry out such duties. Contractor shall also provide proper additional training for those employees who exhibit poor understanding or implementation of proper procedures.
- 30.6. Contractor shall employ only those individuals who possess a command of the English language sufficient to permit dialogue with University personnel. This minimum language competency is essential to permit discussion of University concerns and requirements and to understand the proper instructions in all situations.

31. **CONTRACT DURATION.** This Contract begins when this Contract is approved by the Office of the Attorney General, and remains in effect until (DATE) to allow for the resolution of any unforeseen issue or subsequently identified Work which may be required to achieve completion of this project or any ancillary item or issue related thereto.
32. **CONTRACT TIME FOR SUBSTANTIAL COMPLETION OF WORK**
- 32.1 Contractor is expected to perform work within five (5) calendar days of receipt of executed Agreement and continue until Substantial Completion of the Project has occurred. Substantial completion is expected to be completed on or before (DATE).
- 32.2 With approval by the University the Contractor may be allowed to begin work prior to (DATE) (hereinafter "Project Start Date").
33. **COSTS AND SCHEDULE OF PAYMENTS.** Contractor will be paid according to the following schedule upon receipt of properly executed and approved invoices and in accordance with the process detailed below. Contractor was awarded this Contract based on a base bid of (BASE BID AMOUNT). It should be the intent of the Contractor to complete the Project at the base bid price. If Change Orders are required the Contractor agrees that total payments made to the Contractor including all Change Orders will not exceed (TOTAL AMOUNT 10% above base bid). If a Change Order exceeds the maximum amount of (10% above base bid) the Agency must receive approval by the state of CT's Department of Construction Services ("DCS") and the new maximum amount shall be set forth in a formal written amendment to the Contract executed by both parties and approved by the Office of the Attorney General. Contractor to submit invoices to the University representative identified in Article 2.2.1 and upon approval by the University payment shall be made to the Contractor by way of check or Automated Clearing House (ACH).
- 33.1 Schedule of Values. Within five (5) days of issuance of the Purchase Order, as a basis for estimating partial payments, the Contractor shall furnish for the approval of the Project Coordinator, an accurate and certified Schedule of Values, broken down into quantities and unit costs for the various parts of the Work. The breakdown shall include a complete definition of all activities, systems and components that form the project. The use of Lump Sum or grouping of activities shall not be allowed without the written consent of the Project Coordinator. It shall be Computer Aided Design (CAD) generated, in a format provided by the Project Coordinator, divided as may be directed and it shall aggregate the total sum of the Contract. The Contractor shall also be required to submit the original and revised schedule in electronic format to the Project Coordinator. If requested, the Contractor shall submit evidence supporting this Schedule.
- 33.2 Partial Payments/Retainage. The Contractor shall submit a requisition for partial payment on the last day of each month, for the preceding month. The Contractor's requisition for partial payment shall be on (2) two original and notarized AIA forms G701 and G702, submitted to the Project Coordinator. It shall be subdivided into items corresponding with the items listed on the approved Schedule of Values. Requisitions for partial payment will not be processed until the Schedule of Values has been approved.
- 33.2.1 The Project Coordinator will make a check of the Contractor's monthly requisitions for partial payments to arrive at what is, in its opinion, a fair and just estimate of the materials suitably stored on the Site and the amount of Work performed on the Contract.

- 33.2.2 Retainage: In making such partial payments for the Work, a sum equal to seven and one-half percent (7.5%) of the estimated amount of each payment shall be deducted and retained by the University until the Project is fifty (50%) completed to a degree acceptable to the University. Once fifty (50%) of the Project has been completed the retainage amount deducted and retained by the University for additional partial payments for Work shall be reduced to five (5%) of the estimated amount of each payment.

34. DELIVERY OF STATEMENT SHOWING AMOUNTS DUE FOR WAGES, MATERIALS AND SUPPLIES

- 34.1 For each requisition for partial payment under this Contract, the University reserves the right to require the Contractor and every Subcontractor to submit a written verified statement, in a form satisfactory to the University, showing in detail all amounts then due and unpaid by such Contractor or Subcontractor for daily or weekly wages to all laborers employed by him for the performance of the Work or to other persons for materials, equipment or supplies delivered at the site.
- 34.2 Failure to comply with this requirement may result in the University withholding payment pursuant to **Article 37**.

35. COMPLETION AND ACCEPTANCE

- 35.1 Substantial Completion:
- 35.1.1 Punch List: When the Contractor believes that the Work, or a portion of the Work that the University has agreed to accept separately, is substantially complete, the Contractor shall compile a punch list of items yet to be completed or corrected for that portion of the Work. The Contractor shall submit its punch list to the Project Coordinator with a letter requesting that the Project Coordinator accept that portion of the Work on behalf of the University, for substantial use. Failure to include an item on its punch list shall not alter the Contractor's responsibility to complete the Work in accordance with the Contract Documents.
- 35.1.2 Should the Project Coordinator conclude that the punch list is incomplete or that the Work is not yet complete enough to be considered for substantial use, the Project Coordinator shall so notify the Contractor. Should the Project Coordinator, conclude that the Work is sufficiently complete to warrant an inspection; such inspection shall be made.
- 35.1.3 Subsequent to performing the Inspections for Substantial Completion, the Project Coordinator shall provide the Contractor with copies thereof. The Contractor shall promptly complete or correct all items listed thereon as required to bring them into accordance with the Contract Documents.
- 35.1.4 When the Project Coordinator believes that the Work or designated portion thereof, is sufficiently complete to allow the University to occupy or to utilize it for its intended use, the Project Coordinator shall issue the Certificate of Substantial Completion for signature. The Certificate may be conditional, in which case it shall have a list of outstanding items to be completed or corrected attached to it. The Certificate shall establish the Date of Substantial Completion. Guaranties and warranties required by the Contract Documents shall commence on the Date of Substantial Completion of the Work or portion thereof, unless specified otherwise in the Certificate.

- 35.1.5 Subsequent to the signing of the Certificate of Substantial Completion, the Contractor may request on its application for partial payment, a reduction in the retainage withheld for the Work or portion thereof, stated in the Certificate. The amount of the reduction in the retainage is subject to the approval of the Project Coordinator.
 - 35.1.6 "Certificate of Substantial Completion" is (incorporated herein by reference and attached hereto as Attachment D).
- 35.2 Final Inspection:
- 35.2.1 When the Contractor believes that all the items specified in the Inspection(s) for Substantial Completion have been completed or corrected and are in accordance with the Contract Documents, the Contractor shall submit a written request to the Project Coordinator, to perform Final Inspections of the Project.
 - 35.2.2 Should the Project Coordinator conclude that the Work is not yet complete, they shall so notify the Contractor. Should the Project Coordinator conclude that the Work is sufficiently complete to warrant an inspection; they shall make such inspections.
 - 35.2.3 Should the Project Coordinator find that portions of the Work are not in accordance with the Contract Documents, whether they were discovered on an earlier inspection or not, they shall so notify the Contractor. The Contractor shall promptly complete or correct all such items as required to bring them into accordance with the Contract Documents. The Contractor shall then request that the Project Coordinator perform another inspection. This procedure shall be repeated until there are no remaining items that are not in accordance with the Contract Documents. At this time the Project Coordinator shall issue a written Certificate of Compliance to the Contractor.

36. FINAL PAYMENT/PAYMENT OF RETAINAGE

- 36.1 Subsequent to the receipt of the Certificate of Completion, the Contractor may submit its Final Request for Partial Payment to the Project Coordinator. The Contractor shall clearly identify the submittal as being its Final Request for Partial Payment. The following shall accompany this request.
 - 36.1.1 Completed "Building Contractor Reporting Form" (incorporated herein by reference and attached hereto as Attachment A) for the General Contractor and each Subcontractor on the project.
 - 36.1.2 An affidavit from the Contractor that all payrolls, bills for materials and equipment, subcontracts and other indebtedness connected with the Work for which the University may be responsible, have been paid.
 - 36.1.3 Consent of Surety, if any, to final payment.
 - 36.1.4 If so requested by the University, other data establishing payment of obligations, such as receipts, releases and waivers of liens,
 - 36.1.5 A "Certificate of Compliance" (incorporated herein by reference and attached hereto as Attachment B) certifying that the Project was built in accordance with the Plans, Specifications and approved Change Orders, and that the Project is in substantial compliance with all applicable codes as required by Chapter 541 of the Connecticut General Statutes.

- 36.2 The University reserves the right to retain for a period of thirty (30) days after the filing of the Final Request for Partial Payment, the amount therein stated, less all prior payments and advances to the Contractor.
- 36.3 All prior payments, including those relating to additional work, shall be subject to correction by this payment, which is throughout this Contract called the "Final Payment."
- 36.4 The acceptance by the Contractor of the Final Payment shall constitute a release by the Contractor, of all claims against the University in connection with the Contract. No payment, final or partial, shall act as a release to the Contractor or its sureties, from any obligations under this Contract.

37. THE UNIVERSITY'S RIGHT TO WITHHOLD PAYMENTS

- 37.1 The University may withhold a portion of any Payment due the Contractor that may, in the judgment of the University, be necessary:
 - 37.1.1 To assure the payment of just claims then due and unpaid to any persons supplying labor or materials for the Work.
 - 37.1.2 To protect the University from loss due to defective, unacceptable or non-conforming Work not remedied by the Contractor.
 - 37.1.3 To protect the University 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.
- 37.2 The University shall have the right to apply any amount withheld under this section as the University may deem proper to satisfy protection from claims. The amount withheld shall be considered a payment to the Contractor.
- 37.3 The University has the right to withhold payment if the Contractor fails to provide accurate submissions of Submittals, update the status including but not limited to the following: as-built documents, request for information (RFI) log, Schedule, submittal log, Change Order log, certified payrolls (if applicable), and daily reports and all other requirement of the Contract Documents.
- 37.4 Neither Final Payment nor any remaining retained percentage shall become due until the Contractor submits to the Project coordinator:
 - 37.4.1 An affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the University or Owner, or the University's property or Owner's property, might be responsible or encumbered (less amounts withheld by the University have been paid or otherwise satisfied),
 - 37.4.2 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 until at least 30 days' prior written notice has been given to the University,
 - 37.4.3 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,
 - 37.4.4 Consent of surety, if any, to Final Payment and

37.4.5 If required by the University, 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 University.

37.5 If a Subcontractor refuses to furnish a release or waiver required by the University, the Contractor may furnish a bond satisfactory to the University to indemnify the University against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the University all money that the University may be compelled to pay in discharging such lien, including all costs and reasonable attorney's fees.

38. **STANDARD WAGE RATES.** This Contract shall be subject to Conn. Gen. Stat. § 31-57f regarding Standard Wage Rates for Certain Service Workers. Hourly rates may change only as a result of increases in Standard Wage Rates.

38.1 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.

39. **LIQUIDATED DAMAGES.**

39.1 The Contractor shall be liable for liquidated damages in the amount of THREE HUNDRED (\$300.00) DOLLARS FOR EACH CALENDAR DAY beyond the Project's Substantial Completion date.

39.2 The Liquidated Damages or any portion thereof may be waived at the sole discretion of the University, as warranted/applicable.

39.3. Any delays that are not the responsibility of the Contractor will be considered in the interpretation and application of this Article. Both parties understand and agree that possible delays can occur due to (but not limited to) University-responsible portions of the project, special-order items where the delay is out of the control of the Contractor, and similar items beyond the Contractor's control.

39.4 No payment by the University, either partial or final, shall be construed to waive the University's right to seek liquidated damages.

39.5 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 University and the University shall not be liable for any damages which Contractor may incur as a result of such decision. In addition, if the court enjoins the University from entering into or proceeding with the Contract herein, the University 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.

40. **STATE LIABILITY.** The State shall assume no liability for payment of services under the terms of this Contract until the Contractor is notified that this Contract has been accepted by the University and approved by the State's Office of the Attorney General.

41. **CONTRACT ASSIGNMENT**

- 41.1 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 University.
- 41.2 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.

42. UNIVERSITY'S RIGHT TO STOP WORK OR TERMINATE CONTRACT

- 42.1 The University has the right to stop the Work or terminate the Contract:

- 42.1.1 If the Contractor shall be adjudged bankrupt or make an assignment for the benefit of creditors.
- 42.1.2 If a receiver or liquidator shall be appointed for the Contractor or for any of its property and shall not have been dismissed within twenty (20) days after such appointment; or the proceedings in connection therewith shall not be stayed on appeal within the said twenty days.
- 42.1.3 If the Contractor shall refuse or fail, after notice of warning from the Project Coordinator, to supply enough properly skilled workmen or specified materials to complete the Work within the specified period of time.
- 42.1.4 If the Contractor shall refuse or fail to prosecute the Work or any part thereof, with such diligence as will insure its completion within the period of time herein specified, or any duly authorized extension thereof, or the Contractor shall fail to complete the Work within the specified period of time.
- 42.1.5 If the Contractor shall fail to make prompt payment to persons supplying labor or materials for the Work.
- 42.1.6 If the Contractor shall fail or refuse to regard laws, ordinances or the instructions of the Project Coordinator, or otherwise be guilty of substantial violation of any provisions of this Contract.
- 42.1.7 The University shall have the authority to suspend the Work wholly or in part, for such period or periods as the University considers to be in the best interests of the University and/or 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.
 - 42.1.7.1 If the University, 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 is due as a result of such suspension or delay, the Contractor shall submit to the University in writing a request for a Contract adjustment within 7 calendar days of receipt of the notice to resume Work. The request shall set forth the specific reasons and support for said adjustment.
 - 42.1.7.2 The University shall evaluate any such requests received. If the University 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 University will make a reasonable adjustment, excluding profit, of the Contract terms. The University will notify the Contractor of the determination as to what adjustments of the Contract, if any, that the University deems warranted.

42.1.7.3 No contract adjustment will be made unless the Contractor has submitted the request for adjustment within the time prescribed.

42.1.7.4 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 some other term or condition of this Contract.

42.1.8 Notwithstanding any provision or language in the Contract to the contrary, the University may terminate the Contract whenever the University determines at their sole discretion that such termination is in the best interests of the University and/or 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.

42.1.9 In the event of such termination, the Contractor shall be entitled to reasonable compensation as determined by the University, however, no claim for lost overhead or profits shall be allowed.

42.1.10 Materials obtained by the Contractor for the Work that have been inspected, tested as required, and accepted by the University, and that are not incorporated into the Work, shall, at the option of the University, 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 University, as shown by actual cost records.

42.1.11 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.

42.1.12 The University may then, without prejudice to any other rights or remedy it have, subsequent to SEVEN (7) DAYS WRITTEN NOTICE to the Contractor, terminate the employment of the Contractor and its right to proceed. The University may then take possession of the Work and complete the Work by contract or otherwise, as the University may deem expedient.

42.2 Notwithstanding any provisions in this Contract, the University, through a duly authorized employee, may, after making a written determination that the Contractor has breached the Contract, terminate the contract in accordance with the following breach provision.

42.2.1 Breach. If either party breaches the contract in any respect, the non-breaching party shall provide written notice of the breach to the breaching party and afford the breaching party an opportunity to cure within ten (10) days from the date that the breaching party receives the notice. In the case of a Contractor breach, any other time period which the University sets forth in the notice shall trump the ten (10) days. The right to cure period shall be extended if the non-breaching party is satisfied that the breaching party is making a good faith effort to cure but the nature

of the breach is such that it cannot be cured within the right to cure period. The notice may include an effective contract termination date if the breach is not cured by the stated date and, unless otherwise modified by the non-breaching party in writing prior to the termination date, no further action shall be required of any party to effect the termination as of the stated date. If the notice does not set forth an effective contract termination date, then the non-breaching party may terminate the contract by giving the breaching party no less than twenty four (24) hours' prior written notice. If the University believes that the Contractor has not performed according to the contract, the University may withhold payment in whole or in part pending resolution of the performance issue, provided that the University notifies the Contractor in writing prior to the date that the payment would have been due.

- 42.3. The University shall send the notice of termination via certified mail, return receipt requested, to the Contractor at the most current address which the Contractor has furnished to the University for purposes of correspondence, or by hand delivery. Upon receiving the notice from the University, the Contractor shall immediately discontinue all services affected in accordance with the notice, undertake all commercially reasonable efforts to mitigate any losses or damages, and deliver to the University all records. The records are deemed to be the property of the University and the Contractor shall deliver them to the College/University no later than thirty (30) days after the termination of the Contract or fifteen (15) days after the Contractor receives a written request from the University for the records. The Contractor shall deliver those records that exist in electronic, magnetic or other intangible form in a non-proprietary format, such as, but not limited to, ASCII or .TXT.
- 42.4. Upon receipt of a written notice of termination from the University, the Contractor shall cease operations as the University directs in the notice, and take all actions that are necessary or appropriate, or that the University may reasonably direct, for the protection, and preservation of the goods and any other property. Except for any work which the University directs the Contractor to perform in the notice prior to the effective date of termination, and except as otherwise provided in the notice, the Contractor shall terminate or conclude all existing subcontracts and purchase orders and shall not enter into any further subcontracts, purchase orders or commitments.
- 42.5. The University shall, within forty-five (45) days of the effective date of termination, reimburse the Contractor for its performance rendered and accepted by the University in accordance with the terms of this Contract, in addition to all actual and reasonable costs incurred after termination in completing those portions of the performance which the notice required the Contractor to complete. However, the Contractor is not entitled to receive and the University is not obligated to tender to the Contractor any payments for anticipated or lost profits. Upon request by the University, the Contractor shall assign to the University, or any replacement Contractor which the University designates, all subcontracts, purchase orders and other commitments, deliver to the University all records and other information pertaining to its performance, and remove from State premises, whether leased or owned, all of Contractor's property, equipment, waste material and rubbish related to its performance, all as the University may request.
- 42.6. For breach or violation of any of the provisions in the section of the Contract concerning representations and warranties, the University may terminate the contract in accordance with its terms and revoke any consent to assignments given as if the assignments had never been requested or consented to, without liability to the Contractor or Contractor Parties or any third party.

- 42.7. Upon termination of the contract, all rights and obligations shall be null and void, so that no party shall have any further rights or obligations to any other party, except with respect to the sections which survive termination. All representations, warranties, agreements and rights of the parties under the Contract shall survive such termination to the extent not otherwise limited in the Contract and without each one of them having to be specifically mentioned in the Contract.
- 42.8. Termination of the Contract pursuant to this section shall not be deemed to be a breach of contract by the University.

43. INDEMNIFICATION

- 43.1 The Contractor shall indemnify, defend and hold harmless the State and its officers, representatives, agents, servants, employees, successors and assigns from and against any and all (1) claims arising, directly or indirectly, in connection with the Contract, including the acts of commission or omission (collectively, the "Acts") of the Contractor or contractor parties; and (2) liabilities, damages, losses, costs and expenses, including but not limited to, attorneys' and other professionals' fees, arising, directly or indirectly, in connection with claims, Acts or the contract. The Contractor shall use counsel reasonably acceptable to the State in carrying out its obligations under this section. The Contractor's obligations under this section to indemnify, defend and hold harmless against claims includes claims concerning confidentiality of any part of or all of the Contractor's bid, proposal or any records, any intellectual property rights, other proprietary rights of any person or entity, copyrighted or uncopyrighted compositions, secret processes, patented or unpatented inventions, articles or appliances furnished or used in the performance.
- 43.2 The Contractor shall not be responsible for indemnifying or holding the State harmless from any liability arising due to the negligence of the State or any third party acting under the direct control or supervision of the State.
- 43.3 The Contractor shall reimburse the State for any and all damages to the real or personal property of the State caused by the Acts of the Contractor or any contractor parties. The State shall give the Contractor reasonable notice of any such claims.
- 43.4 The Contractor's duties under this section shall remain fully in effect and binding in accordance with the terms and conditions of the Contract, without being lessened or compromised in any way, even where the Contractor is alleged or is found to have merely contributed in part to the Acts giving rise to the claims and/or where the State is alleged or is found to have contributed to the Acts giving rise to the claims.
- 43.5 The Contractor shall carry and maintain at all times during the term of the Contract, and during the time that any provisions survive the term of the Contract, sufficient general liability insurance to satisfy its obligations under this Contract. The Contractor shall cause the State to be named as an additional insured on the policy and shall provide (1) a certificate of insurance, (2) the declaration page and (3) the additional insured endorsement to the policy to the University prior to the Effective Date of the Contract evidencing that the State is an additional insured. The Contractor shall not begin Work until the delivery of these three (3) documents to the University. State shall be entitled to recover under the insurance policy even if a body of competent jurisdiction determines that State is contributorily negligent.

- 43.6 This section shall survive the termination of the Contract and shall not be limited by reason of any insurance coverage.

44. CONTRACTOR'S INSURANCE

- 44.1 In accordance with Article 43.5, the Contractor shall not commence Work under this Contract until the Contractor has filed, with the Business Office of the University, a Certificate of Insurance, executed by an insurance company approved by the University and on the form provided by the University, stating that with respect to the Contract awarded, the Contractor carries insurance in accordance with the following requirements and stipulations.

44.1.1 Commercial General Liability Insurance:

- 44.1.1.1 With respect to the operations it performs and also those performed for it by subcontractors, the Contractor shall carry commercial general liability insurance, including Contractual Liability, Products and Completed Operations, Broad Form Property Damage and Independent Contractors. Limits shall be no less than \$1,000,000 each occurrence and \$2,000,000 annual aggregate. If underground work is to be undertaken, policy shall have coverage for and exclusions removed for "x, c and u". Products and completed operations insurance for ongoing and completed operations shall be maintained for a period of three (3) years after completion. Coverage shall be on a primary basis.

44.1.2 Automobile Liability Insurance:

- 44.1.2.1 The Contractor shall obtain automobile liability insurance covering the operation of all motor vehicles, including those hired or borrowed, that are used in connection with the Project; said insurance shall provide coverage of at least \$1,000,000 for each accident or occurrence resulting in damages from:

- (1) bodily injury to or death of persons and/or
- (2) destruction of property. If an insurance policy shows an aggregate limit as part of the automobile liability coverage, the aggregate limit must be at least \$2,000,000.

44.1.3 Workers' Compensation Insurance

- 44.1.3.1 With respect to all operations the Contractor performs and all those performed for it by subcontractors, the Contractor and each such subcontractor shall carry Workers' Compensation as required by State Statute and Employers' Liability with a limit not less than \$100,000 per occurrence, \$500,000 disease policy limit, and \$100,000 disease each employee.

- 44.1.4 Umbrella Policy: In addition, Contractor shall provide an umbrella policy providing in excess of the underlying Commercial General Liability, Automobile Liability and Workers' compensation insurance above, with a minimum limits of two million dollars per occurrence or four million dollars aggregate.

- 44.1.5 Builder's Risk Insurance: The Contractor shall provide "Fire and Extended Coverage" on a percent basis, (Completed Value Form), on the insurable portion of the entire Project. The policy shall specifically state that it is for the benefit of and

payable to, the State of Connecticut, Southern Connecticut State University, the contractor and all persons furnishing labor or labor and materials for the Work, as their interests may appear.

- 44.1.6 Waiver of Governmental Immunity: Unless requested otherwise by the State of Connecticut, the Contractor and its insurer shall waive governmental immunity as a defense and shall not use the defense of governmental immunity in the adjustment of claims or in the defense of any suit brought against the State. The contractor shall assume and pay all costs and billings for premiums and audit charges earned and payable under the required insurance.
- 44.1.7 The Contractor shall keep all the required insurance in continuous effect until the University determines that the Contractor has fulfilled all of its obligations under the Contract.
- 44.1.8 Compensation: There shall be no direct compensation allowed the Contractor on account of any premium or other charge necessary to take out and keep in effect all insurance or bonds, but the costs thereof shall be considered included in the general cost of the work.
- 44.1.9 Deductible Clause: Insurance contracts required under this section shall not contain a deductible clause.
- 44.1.10 Additional Insured: On all insurances specified herein, the State of Connecticut and Southern Connecticut State University, shall be named as additional insured parties on all liability policies.

45. **SOVERIGN IMMUNITY.** The parties acknowledge and agree that nothing in this Contract shall be construed as a modification, compromise or waiver by the State of any rights or defenses of any immunities provided by Federal law or the laws of the State of Connecticut to the State or any of its officers and employees, which they may have had, now have or will have with respect to all matters arising out of the Contract. To the extent that this section conflicts with any other section, this section shall govern.

46. **CLAIMS AGAINST THE STATE.** The Contractor agrees that the sole and exclusive means for the presentation of any claim against the State arising from this Contract shall be in accordance with Chapter 53 of the Connecticut General Statutes (Claims Against the State) and the Contractor further agrees not to initiate legal proceedings in any state or federal court in addition to, or in lieu of, said Chapter 53 proceedings.

47. **APPLICABLE LAW.** This Contract shall be governed by the laws of the State of Connecticut without regard to its principles of conflicts of laws. The Contractor shall at all times comply and observe all federal and state laws, local laws, ordinances and regulations which are in effect during the period of this Contract and which in any manner affect the Work or its conduct.

48. **NONDISCRIMINATION**

(a) For purposes of this Section, the following terms are defined as follows:

- (1) "Commission" means the Commission on Human Rights and Opportunities;
- (2) "Contract" and "contract" include any extension or modification of the Contract or contract;
- (3) "Contractor" and "contractor" include any successors or assigns of the Contractor or contractor;

- (4) "Gender identity or expression" means a person's gender-related identity, appearance or behavior, whether or not that gender-related identity, appearance or behavior is different from that traditionally associated with the person's physiology or assigned sex at birth, which gender-related identity can be shown by providing evidence including, but not limited to, medical history, care or treatment of the gender-related identity, consistent and uniform assertion of the gender-related identity or any other evidence that the gender-related identity is sincerely held, part of a person's core identity or not being asserted for an improper purpose.
- (5) "good faith" means that degree of diligence which a reasonable person would exercise in the performance of legal duties and obligations;
- (6) "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;
- (7) "marital status" means being single, married as recognized by the State of Connecticut, widowed, separated or divorced;
- (8) "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;
- (9) "minority business enterprise" means any small contractor or supplier of materials fifty-one percent 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 C.G.S. § 32-9n; and
- (10) "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.

For purposes of this Section, the terms "Contract" and "contract" do not include a contract where each contractor is (1) a political subdivision of the state, including, but not limited to, a municipality, unless the contract is a municipal public works contract or quasi-public agency project contract, (2) any other state, including but not limited to any federally recognized Indian tribal governments, as defined in C.G.S. § 1-267, (3) the federal government, (4) a foreign government, or (5) an agency of a subdivision, state or government described in the immediately preceding enumerated items (1), (2), (3), or (4).

- (b) (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, status as a veteran, 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 ensure 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, status as a veteran, intellectual disability, mental disability or physical disability, including, but not limited to,

blindness, unless it is shown by the 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 the Contractor has a collective bargaining Agreement or other contract or understanding and each vendor with which the 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 C.G.S. §§ 46a-68e and 46a-68f and with each regulation or relevant order issued by said Commission pursuant to C.G.S. §§ 46a-56, 46a-68e, 46a-68f and 46a-86; 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 C.G.S. § 46a-56. If the contract is a public works contract, municipal public works contract or contract for a quasi-public agency project, the Contractor agrees and warrants that he or she will make good faith efforts to employ minority business enterprises as subcontractors and suppliers of materials on such public works or quasi-public agency projects.

- (c) 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.
- (d) The Contractor shall develop and maintain adequate documentation, in a manner prescribed by the Commission, of its good faith efforts.
- (e) The Contractor shall include the provisions of subsection (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 in every subcontract entered into in order to fulfill any obligation of a municipal public works contract for a quasi-public agency project, 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 C.G.S. § 46a-56, as amended; 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 regarding a State contract, 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.
- (f) The Contractor agrees to comply with the regulations referred to in this Section as they exist on the date of this Contract and as they may be adopted or amended from time to time during the term of this Contract and any amendments thereto.
- (g) (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 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 C.G.S. § 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 C.G.S. § 46a-56.

- (h) The Contractor shall include the provisions of the foregoing paragraph 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 C.G.S. § 46a-56 as amended; 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 regarding a State contract, 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.

49. **EXECUTIVE ORDERS.** This Contract is subject to the provisions of Executive Order No. Three of Governor Thomas J. Meskill, promulgated June 16, 1971, concerning labor employment practices, Executive Order No. Seventeen of Governor Thomas J. Meskill, promulgated February 15, 1973, concerning the listing of employment openings and Executive Order No. Sixteen of Governor John G. Rowland promulgated August 4, 1999, concerning violence in the workplace, all 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 may also be subject to Executive Order No. Fourteen of Governor M. Jodi Rell, promulgated April 17, 2006, concerning procurement of cleaning products and services and to Executive Order No. Forty-nine of Governor Dannel P. Malloy, promulgated May 22, 2015, mandating disclosure of certain gifts to public employees and contributions to certain candidates for office. If Executive Order Fourteen and/or Executive Order Forty-nine are applicable, they are deemed to be incorporated into and are made a part of the Contract as if they had been fully set forth in it. At the Contractor's request, the Department shall provide a copy of these orders to the Contractor.

50. **CAMPAIGN CONTRIBUTION RESTRICTIONS.** For all State contracts as defined in Conn. Gen. Stat. § 9-612(g) the authorized signatory to this contract expressly acknowledges receipt of the State Elections Enforcement Commission (SEEC) notice advising state contractors of state campaign contribution and solicitation prohibitions, and will inform its principles of the contents of the notice. See Form reproduced and inserted below.



Notice to Executive Branch State Contractors and Prospective State Contractors of Campaign Contribution and Solicitation Limitations

This notice is provided under the authority of Connecticut General Statutes §9-612 (f) (2) and is for the purpose of informing state contractors and prospective state contractors of the following law (italicized words are defined on the reverse side of this page).

CAMPAIGN CONTRIBUTION AND SOLICITATION LIMITATIONS

No *state contractor, prospective state contractor, principal of a state contractor or principal of a prospective state contractor*, with regard to a *state contract or state contract solicitation* with or from a state agency in the executive branch or a quasi-public agency or a holder, or principal of a holder, of a valid prequalification certificate, shall make a contribution to (i) an exploratory committee or candidate committee established by a candidate for nomination or election to the office of Governor, Lieutenant Governor, Attorney General, State Comptroller, Secretary of the State or State Treasurer, (ii) a political committee authorized to make contributions or expenditures to or for the benefit of such candidates, or (iii) a party committee (which includes town committees).

In addition, no holder or principal of a holder of a valid prequalification certificate, shall make a contribution to (i) an exploratory committee or candidate committee established by a candidate for nomination or election to the office of State senator or State representative, (ii) a political committee authorized to make contributions or expenditures to or for the benefit of such candidates, or (iii) a party committee.

On and after January 1, 2011, no state contractor, prospective state contractor, principal of a state contractor or principal of a prospective state contractor, with regard to a state contract or state contract solicitation with or from a state agency in the executive branch or a quasi-public agency or a holder, or principal of a holder of a valid prequalification certificate, shall *knowingly solicit* contributions from the state contractor's or prospective state contractor's employees or from a *subcontractor or principals of the subcontractor* on behalf of (i) an exploratory committee or candidate committee established by a candidate for nomination or election to the office of Governor, Lieutenant Governor, Attorney General, State Comptroller, Secretary of the State or State Treasurer, (ii) a political committee authorized to make contributions or expenditures to or for the benefit of such candidates, or (iii) a party committee.

DUTY TO INFORM

State contractors and prospective state contractors are required to inform their principals of the above prohibitions, as applicable, and the possible penalties and other consequences of any violation thereof.

PENALTIES FOR VIOLATIONS

Contributions or solicitations of contributions made in violation of the above prohibitions may result in the following civil and criminal penalties:

Civil penalties—Up to \$2,000 or twice the amount of the prohibited contribution, whichever is greater, against a principal or a contractor. Any state contractor or prospective state contractor which fails to make reasonable efforts to comply with the provisions requiring notice to its principals of these prohibitions and the possible consequences of their violations may also be subject to civil penalties of up to \$2,000 or twice the amount of the prohibited contributions made by their principals.

Criminal penalties—Any knowing and willful violation of the prohibition is a Class D felony, which may subject the violator to imprisonment of not more than 5 years, or not more than \$5,000 in fines, or both.

CONTRACT CONSEQUENCES

In the case of a state contractor, contributions made or solicited in violation of the above prohibitions may result in the contract being voided.

In the case of a prospective state contractor, contributions made or solicited in violation of the above prohibitions shall result in the contract described in the state contract solicitation not being awarded to the prospective state contractor, unless the State Elections Enforcement Commission determines that mitigating circumstances exist concerning such violation.

The State shall not award any other state contract to anyone found in violation of the above prohibitions for a period of one year after the election for which such contribution is made or solicited, unless the State Elections Enforcement Commission determines that mitigating circumstances exist concerning such violation.

Additional information may be found on the website of the State Elections Enforcement Commission, www.ct.gov/seec. Click on the link to "Lobbyist/Contractor Limitations."



DEFINITIONS

"State contractor" means a person, business entity or nonprofit organization that enters into a state contract. Such person, business entity or nonprofit organization shall be deemed to be a state contractor until December thirty-first of the year in which such contract terminates. "State contractor" does not include a municipality or any other political subdivision of the state, including any entities or associations duly created by the municipality or political subdivision exclusively amongst themselves to further any purpose authorized by statute or charter, or an employee in the executive or legislative branch of state government or a quasi-public agency, whether in the classified or unclassified service and full or part-time, and only in such person's capacity as a state or quasi-public agency employee.

"Prospective state contractor" means a person, business entity or nonprofit organization that (i) submits a response to a state contract solicitation by the state, a state agency or a quasi-public agency, or a proposal in response to a request for proposals by the state, a state agency or a quasi-public agency, until the contract has been entered into, or (ii) holds a valid prequalification certificate issued by the Commissioner of Administrative Services under section 4a-100. "Prospective state contractor" does not include a municipality or any other political subdivision of the state, including any entities or associations duly created by the municipality or political subdivision exclusively amongst themselves to further any purpose authorized by statute or charter, or an employee in the executive or legislative branch of state government or a quasi-public agency, whether in the classified or unclassified service and full or part-time, and only in such person's capacity as a state or quasi-public agency employee.

"Principal of a state contractor or prospective state contractor" means (i) any individual who is a member of the board of directors of, or has an ownership interest of five per cent or more in, a state contractor or prospective state contractor, which is a business entity, except for an individual who is a member of the board of directors of a nonprofit organization, (ii) an individual who is employed by a state contractor or prospective state contractor, which is a business entity, as president, treasurer or executive vice president, (iii) an individual who is the chief executive officer of a state contractor or prospective state contractor, which is not a business entity, or if a state contractor or prospective state contractor has no such officer, then the officer who duly possesses comparable powers and duties, (iv) an officer or an employee of any state contractor or prospective state contractor who has *managerial or discretionary responsibilities with respect to a state contract*, (v) the spouse or a *dependent child* who is eighteen years of age or older of an individual described in this subparagraph, or (vi) a political committee established or controlled by an individual described in this subparagraph or the business entity or nonprofit organization that is the state contractor or prospective state contractor.

"State contract" means an agreement or contract with the state or any state agency or any quasi-public agency, let through a procurement process or otherwise, having a value of fifty thousand dollars or more, or a combination or series of such agreements or contracts having a value of one hundred thousand dollars or more in a calendar year, for (i) the rendition of services, (ii) the furnishing of any goods, material, supplies, equipment or any items of any kind, (iii) the construction, alteration or repair of any public building or public work, (iv) the acquisition, sale or lease of any land or building, (v) a licensing arrangement, or (vi) a grant, loan or loan guarantee. "State contract" does not include any agreement or contract with the state, any state agency or any quasi-public agency that is exclusively federally funded, an education loan, a loan to an individual for other than commercial purposes or any agreement or contract between the state or any state agency and the United States Department of the Navy or the United States Department of Defense.

"State contract solicitation" means a request by a state agency or quasi-public agency, in whatever form issued, including, but not limited to, an invitation to bid, request for proposals, request for information or request for quotes, inviting bids, quotes or other types of submittals, through a competitive procurement process or another process authorized by law waiving competitive procurement.

"Managerial or discretionary responsibilities with respect to a state contract" means having direct, extensive and substantive responsibilities with respect to the negotiation of the state contract and not peripheral, clerical or ministerial responsibilities.

"Dependent child" means a child residing in an individual's household who may legally be claimed as a dependent on the federal income tax of such individual.

"Solicit" means (A) requesting that a contribution be made, (B) participating in any fundraising activities for a candidate committee, exploratory committee, political committee or party committee, including, but not limited to, forwarding tickets to potential contributors, receiving contributions for transmission to any such committee, serving on the committee that is hosting a fundraising event, introducing the candidate or making other public remarks at a fundraising event, being honored or otherwise recognized at a fundraising event, or bundling contributions, (C) serving as chairperson, treasurer or deputy treasurer of any such committee, or (D) establishing a political committee for the sole purpose of soliciting or receiving contributions for any committee. Solicit does not include: (i) making a contribution that is otherwise permitted by Chapter 155 of the Connecticut General Statutes; (ii) informing any person of a position taken by a candidate for public office or a public official, (iii) notifying the person of any activities of, or contact information for, any candidate for public office; or (iv) serving as a member in any party committee or as an officer of such committee that is not otherwise prohibited in this section.

"Subcontractor" means any person, business entity or nonprofit organization that contracts to perform part or all of the obligations of a state contractor's state contract. Such person, business entity or nonprofit organization shall be deemed to be a subcontractor until December thirty first of the year in which the subcontract terminates. "Subcontractor" does not include (i) a municipality or any other political subdivision of the state, including any entities or associations duly created by the municipality or political subdivision exclusively amongst themselves to further any purpose authorized by statute or charter, or (ii) an employee in the executive or legislative branch of state government or a quasi-public agency, whether in the classified or unclassified service and full or part-time, and only in such person's capacity as a state or quasi-public agency employee.

"Principal of a subcontractor" means (i) any individual who is a member of the board of directors of, or has an ownership interest of five per cent or more in, a subcontractor, which is a business entity, except for an individual who is a member of the board of directors of a nonprofit organization, (ii) an individual who is employed by a subcontractor, which is a business entity, as president, treasurer or executive vice president, (iii) an individual who is the chief executive officer of a subcontractor, which is not a business entity, or if a subcontractor has no such officer, then the officer who duly possesses comparable powers and duties, (iv) an officer or an employee of any subcontractor who has *managerial or discretionary responsibilities with respect to a subcontract with a state contractor*, (v) the spouse or a *dependent child* who is eighteen years of age or older of an individual described in this subparagraph, or (vi) a political committee established or controlled by an individual described in this subparagraph or the business entity or nonprofit organization that is the subcontractor.

51. **SEVERABILITY**. If any provision of this Contract shall be held invalid by any court of competent jurisdiction, such holding shall not invalidate any other provision hereof.

52. **LEGAL FORCE AND EFFECT**. This Contract shall have no legal force and effect until it is approved as to form and signed by Office of the Attorney General of the State of Connecticut. The State shall assume no liability for performance of services under the terms of this Contract until the Contractor is notified by the University that this Contract has been approved.

The Contractor:
(Contractor's Name)

Southern Connecticut State University:
Statutory Authority: Conn. Gen. Stat. §10a-151b

By: _____

By: _____

Name: _____

Name: _____

Title: _____

Title: _____

Date: _____

Date: _____

Office of the Attorney General

This Agreement is based on a form agreement which, having been reviewed and approved by the Office of the Attorney General is exempt from review pursuant to a Memorandum of Agreement between the Connecticut State Colleges and Universities and the OAG dated July 18, 2019. If this Agreement contains modifications to that form agreement, the Office of the Attorney General must review and approve the Agreement as to form.

OR

Office of the Attorney General *approved as to form*:

By: _____

Name: _____

Title: _____

Date: _____

Connecticut State University System



**Central Connecticut State University
Eastern Connecticut State University
Southern Connecticut State University
Western Connecticut State University
System Office**

STANDARD TERMS AND CONDITIONS

I. DEFINITIONS

The following words, when used herein, shall have the following meanings:

1. "Contract" shall mean any agreement negotiated by and between CSU and the contractor selected by CSU as the result of a request for proposal, request for quotation, or request for bid, including, but not limited to, a personal service agreement or purchase order.
2. "CSU" shall refer to the Connecticut State University System, which is comprised of Central Connecticut State University, Eastern Connecticut State University, Southern Connecticut State University, Western Connecticut State University and the System Office, collectively and individually, as the context requires.
3. "Person" shall mean an individual, partnership, corporation or other business entity, as the context requires.
4. "Proposal" shall mean a response to a request for proposal, request for bid, or request for quotation.
5. "Proposer" shall mean a contractor that submits a response to a request for proposal, request for bid, or request for quotation.
6. "RFP" shall mean a request or invitation for proposal, bid, or quotation, as applicable.

II. TERMS AND CONDITIONS RELATED TO REQUESTS FOR PROPOSALS

A. General Conditions

1. CSU reserves the right to amend or cancel an RFP prior to the date and time for the opening of proposals. CSU, in its sole discretion, reserves the right to accept or reject any and all proposals, in whole or in part, and to waive any technicality in any proposal submitted, and to accept any part of a proposal deemed to be in the best interest of CSU.
2. Proposals received from proposers debarred by the State of Connecticut will not be considered for award.
3. CSU does not commit to specific volumes of activity, nor does it guarantee the accuracy of statistical information provided in the RFP. Such information is supplied to proposers for reference only.
4. All responses to the RFP shall be and remain the sole property of CSU.
5. Each proposer shall bear all costs associated with proposer's response to an RFP, including, but not limited to, the costs of any presentation and/or demonstration required by CSU. In addition, answers or clarifications sought by CSU arising out of or in connection with the proposal shall be furnished by the proposer at the proposer's expense.
6. CSU reserves the right to negotiate, as it may deem necessary, with any or all of the proposers that submit proposals.
7. Any alleged oral agreement or arrangement made by any proposer with CSU or any employee thereof shall not be binding.

B. Submission of Proposals

1. Proposals must be submitted on forms supplied by CSU. Telephone, facsimile, or email proposals will not be accepted in response to an RFP.
2. The time and date proposals are to be received and opened are stated in each RFP issued by CSU. Proposals received in the applicable CSU purchasing department after the date and time specified in the RFP will be returned to the proposer unopened. Proposal amendments received by CSU after the time specified for opening of proposals shall not be considered.
3. All proposals must be addressed to the location designated in the RFP. Proposal envelopes must clearly state the proposal number as well as the date and time of the opening of the proposals, as stated in the RFP. The name and address of the proposer must appear in the upper left hand corner of the envelope.
4. Proposals must be computer prepared, typewritten or handwritten in ink. Proposals submitted in pencil will be rejected.
5. Proposers must answer all the questions set forth in the RFP using the outline and numbering scheme set forth therein. Proposers must furnish all information requested in the RFP and supply all materials required for consideration. Failure of the proposer to answer all questions and supply all information and materials requested may be grounds for rejection of the proposal.
6. All proposals must be signed by a person duly authorized to sign proposals on behalf of the proposer. All signatures on the proposal must be original. Proposals bearing stamp signatures will be rejected. Unsigned proposals will be rejected.
7. Alterations or corrections to the proposal must be initialed by the person signing the proposal or his or her authorized designee. All initials on alterations or corrections to the proposal must be original. In the event that an authorized designee initials an alteration or correction, the proposer must submit a written authorization from the proposal's signatory to the authorized designee, authorizing the designee to make the alteration or correction. Failure to submit such an authorization shall result in rejection of proposal as to those items altered or corrected and not initialed.
8. Conditional proposals are subject to rejection in whole or in part, in the sole discretion of CSU. A conditional proposal is defined as one that limits, modifies, expands or supplements any of the terms and conditions and/or specifications of the RFP.
9. Alternate proposals will not be considered by CSU, unless otherwise noted on the RFP or on the proposal form. An alternate proposal is defined as one that is submitted in addition to the proposer's primary response to the RFP.
10. CSU does not sponsor any one manufacturer's products, but lists equipment by name and model number to designate the quality and performance level desired. Proposers may propose substitutes similar in nature to the

equipment specified. The substitute must, in the sole determination of CSU, be equal in quality, durability, appearance, strength and design to the equipment or product specified in the RFP, or offer a clear advantage to CSU because of improved or superior performance. All proposals including equipment or product substitutes must be accompanied with current descriptive literature on, and data substantiating, the equal or superior nature of the substitute. All final decisions concerning substitutes will be made by CSU prior to any award. The word substitute shall not be construed to permit substantial departure from the detailed requirements of the specifications.

11. Each proposer's prices must be firm for a period up to 120 days from date of the opening of proposals. Prices must be extended in decimal, not fraction, must be net, and must include transportation and delivery charges, fully prepaid by the contractor, to the destination specified in the proposal, and subject only to cash discount.
12. Pursuant to Section 12-412 of the Connecticut General Statutes, the State of Connecticut is exempt from the payment of excise, transportation and sales taxes imposed by the Federal Government and/or the State. Accordingly, such taxes must not be included in proposal prices.
13. If there is a discrepancy between a unit price and an extended price, the unit price will govern.
14. By submitting a proposal, the proposer asserts that the offer and information contained therein is in all respects fair and without collusion or fraud and was not made in connection with any competing proposer's submission of a separate response to the RFP. By submitting a proposal, the proposer further asserts that it neither participated in the formation of CSU's solicitation development process nor had any knowledge of the specific contents of the RFP prior to its issuance, and that no employee of CSU participated directly or indirectly in the preparation of the proposer's proposal.
15. It is the proposer's responsibility to check the website of the State of Connecticut Department of Administrative Services www.biznet.ct.gov/SCP_search/default.aspx?acclast for changes prior to the proposal opening. It is the responsibility of the proposer to obtain all information related to proposal submission including, without limitation, any and all addenda or supplements required.
16. Any person contemplating submitting a proposal who is in doubt as to the true meaning of, or is in need of clarification of, any part of the RFP or the specifications set forth therein, must submit a written request for clarification to CSU. The proposer may rely only upon a response to a request for clarification set forth in writing by CSU.
17. Proposals for the provision of services must include the cost of obtaining all permits, licenses, and notices required by the city or town in which the services is to be provided, and the State and Federal governments..
18. Each proposer must complete and submit with its proposal the following non-discrimination and affirmative action forms: the Notification to Proposers, Contract Compliance, and EEO-1. It shall not be sufficient to declare or state that such forms are on file with the State of Connecticut. Failure to include the required forms shall result in rejection of the proposal.

C. Samples

1. Samples, when required by the RFP, must be submitted strictly in accordance with the requirements of the RFP.
2. Any and all required samples shall be furnished by the proposer at no cost to CSU. All samples, unless

otherwise indicated, will become the property of CSU and will not be returned to the proposer unless the proposer states in the proposal that the sample's return is requested. A sample will be returned on the request of the proposer if the sample has not been rendered useless or beyond its useful life. The proposer must pay the costs associated with the return of any sample. Samples may be held by CSU for comparison with actual product deliveries.

3. The making of chemical and physical tests of samples submitted with proposals shall be made in the manner prescribed by CSU.

D. Bonding Requirements / Guaranty or Surety

1. If required by this RFP, the proposal must be accompanied by a bid bond or a certified check in an amount that is ten percent (10%) of the bid amount. The bid bond must be executed by an insurance company licensed to do business in the State of Connecticut. Certified checks must be made payable to CSU or the appropriate CSU University.
2. The proposal bond must be executed by the proposer as follows:
 - (a) If the proposer is a corporation - must be signed by an official of the corporation above his or her official title, and the corporate seal must be affixed over the signature;
 - (b) If the proposer is a partnership - must be signed by a general partner;
 - (c) If the proposer is an individual - must be signed by the individual and indicate that he or she is "doing business as"
3. The surety company executing the bond or countersigning must be licensed in Connecticut and the bond must be signed by an official of the surety company with the corporate seal affixed over his or her signature. Signatures of two witnesses for both the principal and the surety must appear on the bond.

III. CONTRACT AWARD

1. All proposals properly submitted will be opened and read publicly. Upon award, the proposals are subject to public inspection. CSU will not prepare abstracts of proposals received for distribution, nor will information concerning the proposals received be conveyed by telephone.
2. Award will be made to the lowest responsible qualified proposer who complies with the proposal requirements. Price alone need not be the sole determining factor for an award. Other criteria, listed in the RFP, may be considered by CSU in the award determination.
3. CSU reserves the right to grant an award and/or awards by item, or part thereof, groups of items, or all items of the proposal and to waive minor irregularities and omissions if, in CSU's judgment, the best interests of CSU or the State of Connecticut will be served.
4. CSU reserves the right to correct inaccurate awards resulting from its administrative errors.
5. The Award Notice and Offer (to enter into a formal contract) shall be sent to the awarded proposer by first class certified mail, return receipt requested, to the address provided in the awarded proposal, or by overnight courier. The Notice and Offer shall constitute an offer by CSU to enter into negotiations to come to a formal contract agreement. If the proposer, within ten (10) business days of receipt of said Notice and Offer, declines to begin contract negotiations, then the offer to negotiate a contract may be withdrawn and an offer to negotiate a contract extended to the next lowest responsible qualified proposer, and so on until a contract is negotiated and executed.

6. Each proposal submitted shall constitute an offer by the proposer to furnish any or all of the commodities or services described therein at the prices given and in accordance with conditions set forth in the proposal, the RFP, and these "Standard Terms and Conditions." Acceptance and resulting contract formation shall be in a formal written document authorized by CSU's Purchasing Department and where applicable, approved by the Attorney General, and shall comprise the entire agreement between the proposer and CSU.

IV. TERMS AND CONDITIONS RELATED TO CONTRACT WITH SUCCESSFUL PROPOSER

By submitting a response to the RFP, the proposer agrees that any contract negotiated between it (if the successful proposer), as contractor, and CSU may contain the following provisions, as deemed applicable by CSU:

A. General Conditions

1. Any product developed and accepted by CSU under a contract awarded as a result of an RFP shall be sole property of CSU, unless stated otherwise in the contract.
2. Data collected or obtained by the contractor in connection with the performance of the contract shall not be shared with any third party without the express written approval of CSU.
3. The contractor shall defend, indemnify and hold harmless CSU, its officers and employees, against any and all suits, actions, legal or administrative proceedings, claims, demands, damages, liabilities, monetary loss, interest, attorney's fees, costs and expenses of whatsoever kind or nature arising out of the performance of the agreement, including those arising out of injury to or death of contractor's employees or subcontractors, whether arising before, during or after completion of the services thereunder and in any manner directly or indirectly caused, occasioned or contributed to in whole or in part, by reason of any act, omission, fault or negligence of contractor or its employees, agents or subcontractors. Without limiting the foregoing, the contractor shall defend, indemnify and hold CSU and the State of Connecticut harmless from liability of any kind for the use of any copyright or un-copyrighted composition, secret process, patented or unpatented invention furnished or used in the performance of the contract. This indemnification shall be in addition to the warranty obligations of the contractor and shall survive the termination or cancellation of the contract or any part thereof.
4. The contractor shall: (i) guarantee its products against defective materials and workmanship; (ii) repair damage of any kind, for which it is responsible, to CSU's premises or equipment, to its own work or to the work of other contractors; (iii) obtain and pay for all applicable licenses, permits, and notices; (iv) give all notices and comply with all requirements of the municipality in which the service is to be provided and of the State and federal governments; and (v) carry proper and sufficient insurance to protect the State from loss.
5. The contract shall be interpreted and governed by the laws of the State of Connecticut, without regard to its principles of conflicts of laws.
6. The contractor agrees that it shall be subject to and abide by all applicable federal and state laws and regulations.
7. The contractor agrees that it shall comply with Section 4a-60 of the Connecticut General Statutes and with Executive Orders Nos. 3, 16, 17 and 7C.
8. The contractor agrees that the sole and exclusive means for the presentation of any claim against the State of Connecticut, the Connecticut State University or the Board Of Trustees arising from a contract with CSU, shall be in accordance with the provisions of Chapter 53 of the Connecticut General Statutes (Claims Against the State) and that no additional legal proceedings will be initiated in any state or federal court in addition to, or in lieu of, said Chapter 53 proceedings.
9. The contractor agrees that CSU shall have and retain sole and exclusive right and title in and to the forms, maps, and/or materials produced for CSU pursuant to the contract, including all rights to use, distribute, sell, reprint, or otherwise dispose of same. The contractor further agrees that it shall not copyright, register, distribute, or claim any rights in or to said maps and/or materials or the work produced under the contract.
10. The contractor or subcontractor, as applicable, shall offer and agree to assign to CSU all rights, title and interest in and to all causes of action it may have under Section 4 of the Clayton Act, 15 U.S.C. 15, or under Chapter 624 of the general statutes, arising from the purchase of services, property or intangibles of any kind pursuant to a public purchase contract or subcontract; such assignment shall be made and become effective at the time the contract is executed by the parties, without further acknowledgment by them.
11. The contractor shall not assign or otherwise dispose of the contract or its right, title or interest therein, or its power to execute such contract, to any other person without the prior written consent of CSU.
12. CSU reserves the right to inspect commodities for conformance with proposal specifications. When commodities are rejected by CSU, said commodities shall be removed by the contractor, at the contractor's expense, from the CSU premises within forty-eight (48) hours after notification of such rejection, unless public health and safety require immediate destruction or other disposal of such rejected delivery. Rejected items left longer than forty-eight (48) hours shall be considered abandoned by the contractor and CSU shall have the right to dispose of them as its own property.
13. If any provision, term or condition of the contract is prohibited, invalid, or unenforceable then that provision, term or condition shall be ineffective to the extent of the prohibition, invalidity, or prohibition without invalidating the remaining provisions, terms and conditions unless it materially alters the nature or intent thereof.
14. Should the terms of any purchase order or invoice issued in connection with the contract conflict with the terms of the contract, the terms of the contract shall prevail.
15. Failure of the contractor to deliver commodities or perform services as specified in the contract will constitute authority for CSU to purchase these commodities or services on the open market. The contractor shall promptly reimburse CSU for excess costs incurred by CSU due to these purchases, and these purchases shall be deducted by CSU from the quantities contracted for.
16. No right or duty, in whole or in part, of the contractor under the contract may be assigned or delegated without the prior written consent of CSU. The subcontracting or assignment of any of contractor's obligations under the contract to a subcontractor shall require the prior written approval of CSU.
17. Upon termination of the contract by CSU, the contractor shall both immediately discontinue all services (unless the notice directs otherwise) and

deliver to CSU all data, drawings, specifications, reports, estimates, summaries, and such other information and materials as may have been accumulated by the contractor in performing its duties under the contract, whether completed or in progress. All such documents, information, and materials shall become the property of CSU.

18. The State of Connecticut shall assume no liability for payment for services under the terms of the contract until the contractor is notified that the contract has been accepted by CSU and, if applicable, approved by the Office of Policy and Management ("OPM") or the Department of Administrative Services ("DAS") and by the Attorney General of the State of Connecticut.

B. Insurance

1. Before commencing to perform services pursuant to the contract, the contractor shall obtain, at its own cost and for the duration of the contract, the following insurance:
 - (a) Commercial General Liability: \$1,000,000 combined single limit per occurrence for bodily injury, personal injury and property damage. Coverage shall include Premises and Operations, Independent Contractors, Products and Completed Operations, Contractual Liability and Broad Form Property Damage coverage. If a general aggregate is used, the general aggregate limit shall apply separately to the project or the general aggregate limit shall be twice the occurrence limit.
 - (b) Automobile Liability: \$1,000,000 combined single limit per accident for bodily injury. Coverage extends to owned, hired and non-owned automobiles. If the contractor does not own an automobile, but one is used in the execution of the contract, then only hired and non-owned coverage is required. If a vehicle is not used in the execution of the contract then automobile coverage is not required.
 - (c) Professional Liability: \$1,000,000 limit of liability.
 - (d) Workers' Compensation and Employers Liability: Statutory coverage in compliance with the laws of the State of Connecticut. Coverage shall include Employer's Liability with minimum limits of \$100,000 each accident, \$500,000 Disease – Policy limit, \$100,000 each employee. An Excess Liability/Umbrella Policy may be used to meet the minimum limit guidelines.
2. The contractor shall provide copies of its Certificates of Insurance to CSU, if requested to do so. The Certificates shall include the following:
 - (a) The certificate shall clearly identify the State of Connecticut, its officers, officials, employees, agents, boards and commissions as Additional Insured. The coverage shall contain no special limitations on the scope of protection afforded to the State.
 - (b) The certificate shall clearly indicate the project name and project number or some easily identifiable reference to the relationship to the State.
3. The Certificates shall be signed by a person authorized by that insurer to execute contracts on its behalf. The certificate Accord Form 25 Certificate shall indicate a minimum thirty (30) day endeavor to notify requirement in the event of cancellation or non-renewal of coverage.
4. The contractor shall assume responsibility for payment of any and all deductibles applicable to the insurance policies described in Section IV.B.1 above.
5. The contractor's insurer shall have no right of recovery or subrogation against the State and the described insurance shall be primary coverage.

6. Each required policy of insurance shall provide that it shall not be suspended, voided, cancelled or reduced except after thirty (30) days' prior written notice sent by certified mail to CSU.

7. "Claims Made" coverage shall be unacceptable, with the exception of Professional Liability.

C. Bonds

The successful proposer shall submit the following bonds, at the request of CSU, within ten (10) days of the date of receipt of the Award Notice and Offer:

1. A Performance Bond in the amount of one hundred percent (100%) of the total proposal price; and
2. A Labor and Material Payment Bond in the amount of one hundred percent (100%) of the total proposal price.

A company authorized to transact business in the State of Connecticut shall execute the bonds. Checks shall be made payable to CSU or the appropriate CSU University.

D. Delivery

1. Unless otherwise specified in the proposal, all products and equipment delivered pursuant to the contract shall be new and shall include any and all manufacturer's warranties.
2. Delivery shall be to the point specified in the contract.
3. All deliveries shall display, in plain sight, any related Purchase Order or Reference/Delivery Number. Failure to display said number may cause the shipment to be rejected and returned at the contractor's expense.
4. All deliveries shall be in compliance with Sections 22a-194 to 22a-194g of the Connecticut General Statutes related to product packaging.
5. Deliveries shall be subject to reweighing on official sealed scales designated by the State and payment shall be made on the basis of net weight of materials received.
6. Payment terms are net forty-five (45) days after receipt of goods or invoice, whichever is later. State of Connecticut certified small or minority contractors are payable under terms net thirty (30) days.
7. Monies owed to CSU or the Department of Revenue Services (DRS) by the contractor shall be deducted from current obligations.

E. Inspection and Tests

1. The inspection of all commodities and the making of chemical and physical tests of samples of deliveries to determine whether or not the contract specifications are being complied with shall be made in the manner prescribed by CSU.
2. Any item that fails in any way to meet the terms or specifications set forth in the contract is subject to be paid for at an adjusted price or rejected, in the discretion of CSU.
3. After delivery and installation of any equipment provided pursuant to the contract, the contractor shall certify to CSU that the equipment has been properly installed and is ready for use. Thereafter, for a test period of sixty (60) days, CSU shall operate the system in accordance with its normal operating practices. The acceptance test shall determine if the equipment's operating characteristics meet the performance standards set forth in the contract.

F. Advertising

Reference by the contractor to sales to CSU for advertising and promotional purposes without the prior approval of CSU shall be expressly prohibited.

INSTRUCTIONS TO BIDDERS

1. Faxed bids will **not** be accepted.
2. **Unsigned bids will not be considered.**
3. The "BIDDERS QUALIFICATIONS" form **MUST BE** completed on both sides and returned with bid along with **all other forms**.
4. Any white-outs, cross outs, markovers or any alterations of price **MUST BE** initialed by person signing bid.
5. Completion date may be a prime consideration in awarding this bid.
6. **Bids will be received electronically not later than 2:00 PM on March 16, 2023.** Bids shall be forwarded to the e-mail address procurement@southernct.edu.
7. **ALL** Bid Documents **MUST BE** signed in ink.
8. On February 8, 2007, Governor Rell signed into law Public Act 07-1, An Act Concerning the State Contractor Ban and Gifts to State and Quasi-Public Agencies. For all State contracts as defined in P.A. 07-1 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 state campaign contribution and solicitation prohibitions, and will inform its principals of the contents of the notice. **See Formerly SEEC Form 11.**
9. All bids will be opened at the stipulated time. Results will be posted on the DAS Portal. See below.
10. Bonds must meet the following requirements:
 - a. Corporation. The Bond must be signed by an official of the corporation above his official title and the corporate seal must be affixed over his signature.
 - b. Firm or Partnership. The Bond must be signed by all the partners and indicate they are "Doing Business As" (name of firm).
 - c. Individual. The Bond must be signed by the individual owning the business, and indicated as Owner.
 - d. The surety company executing the bond must be licensed to do business in the State of Connecticut or bond must be countersigned by a company so licensed.

- e. The bond must be signed by an official of the surety company and the corporate seal must be affixed over his signature.
- f. Signatures of two (2) witnesses for both the principal and the surety must appear on the bond.
- g. Power of Attorney for the official signing the bond for the surety company must be submitted with the bond.
- h. Prospective Bidders intending on submitting a bid bond in lieu of a certified check as described in #2 of the Notice to Bidders Form, may use any bid bond form issued by bonding companies for public bidding.

11. Any questions regarding the completion of the bid forms should be directed to:

Southern Connecticut State University
Procurement Services. – Wintergreen Building – 1 Wintergreen Avenue
New Haven, Connecticut 06515
procurement@southernct.edu

12. There will be a **mandatory** pre-bid conference on **February 23, 2023 at 10:00 AM [Doors will be locked at 10:05 AM with no exceptions]** in the Front Lobby of Lyman Center. Contractor's not in attendance, and or who have not signed the attendance sheet at the mandatory pre bid meeting, will not be allowed to submit a bid for this project. Immediately following the pre-bid conference, there will be a tour of the sites. This is the only time the site will be available for inspection.

13. Questions regarding this project must be received in writing via the email address below **no later than 12:00, Noon, on March 1, 2023:**

Procurement – Email: procurement@southernct.edu

14. It is the vendor's responsibility to check SCSU's or DAS website for any addendums. This information can be viewed by accessing

Southern Connecticut State University's website at www.southernct.edu/purchasing/bids

or

DAS: <https://portal.ct.gov/das/ctsource/ctsource>

[Pick 'CTsource Bid Board', 'Open', Organization: 'Southern Connecticut State Univ.']

The DAS portal will have a listing of all bids received and opened.

CONDITIONS

1. E-Mailed bids received after **March 16, 2023, 2:00 PM**, will not be accepted, with the University being the sole arbiter on the acceptance of a bid. The University shall not be held responsible for errors in transmission or any situation which prevents a bid from being delivered electronically prior to 2:00 PM.
2. Southern Connecticut State University reserves the right to reject any and all bids, and to waive any informality in the bids. In case of error in the extension of prices in the bid, the unit price will govern
3. **This project is subject to prevailing wages.**
4. When listed on the Invitation and Bid form, each bidder is required to bid on each Supplemental Bid and is warned that incomplete bidding on the Supplemental Bids may be cause for rejection of the entire bid.
5. In the event of any discrepancy between the amount written in words and the amount written in numerical figures, the amount written in words will be controlling.
6. The SCSU Construction Contract must be signed by the GC prior to the issuance of a Purchase Order.
7. All work is to be completed within the specified number of days from the starting date which is to be confirmed.

INVITATION TO BID
SOUTHERN CONNECTICUT STATE UNIVERSITY
PURCHASING DEPARTMENT
STATE OF CONNECTICUT

BID NUMBER: RFQ-23-SCSU-01
PROJECT NUMBER: SCSU-2022-04
DATE OF INVITATION: February 16, 2023

Bid Packages should be sent electronically to procurement@southernct.edu

Sealed Proposals, subject to the Conditions attached to the Instructions to Bidders, will be received by the Procurement Services Department, but in the interests of safety during this time; **bids will be received electronically not later than 2:00 PM on March 16, 2023. Bids shall be forwarded to the e-mail address procurement@southernct.edu for furnishing labor and materials at: Southern Connecticut State University for: Lyman Center – Roof Replacement – 2023.**

E-Mailed bids received after 2:00 PM will not be accepted, with the University being the sole arbiter on the acceptance of a bid. The University shall not be held responsible for errors in transmission or any situation which prevents a bid from being delivered electronically prior to 2:00 PM. For proper identification, bidders are asked to note the bid number and project name on the subject line of the e-mail. Bid results will be posted on the DAS portal as soon as practicable. See the Instructions for Bidders.

In accordance with bid documents, drawings, and specifications, prepared by the SCSU Office of Facilities Planning and Architectural Services - and Friar Architecture, which are included in these documents.

DATED: February 16, 2023

Richard Glasson _____
Procurement
Email: procurement@southernct.edu

1. Bid Security (Notice to Bidders):
 - a). Individual bid bond for an amount not less than ten (10) percent of the total amount of the bid.
 - b). Certified check made payable to “Controller, Southern Connecticut State University”, for up to ten (10) percent of the bid.
2. Security for Faithful Performance (Notice to Bidders):
Performance Bond and Labor and Material Bond in the amount of 100% of the Purchase Order price must be filed by the successful low bidder prior to the start of construction.
3. Commencement and Completion of Work (Section 01001/1.4, General Requirements):
4. Nondiscrimination and Labor Recruitment:
(A) This project is subject to Connecticut Public Acts 88-351, 89-253 and 91-58 section 16 (See Attachments No. 1 and No. 2).



STATE OF CONNECTICUT

GIFT AND CAMPAIGN CONTRIBUTION CERTIFICATION

Written or electronic certification to accompany a State contract with a value of \$50,000 or more, pursuant to C.G.S. §§ 4-250, 4-252(c) and 9-612(f)(2) and Governor Dannel P. Malloy's Executive Order 49.

INSTRUCTIONS:

Complete all sections of the form. Attach additional pages, if necessary, to provide full disclosure about any lawful campaign contributions made to campaigns of candidates for statewide public office or the General Assembly, as described herein. Sign and date the form, under oath, in the presence of a Commissioner of the Superior Court or Notary Public. Submit the completed form to the awarding State agency at the time of initial contract execution and if there is a change in the information contained in the most recently filed certification, such person shall submit an updated certification either (i) not later than thirty (30) days after the effective date of such change or (ii) upon the submittal of any new bid or proposal for a contract, whichever is earlier. Such person shall also submit an accurate, updated certification not later than fourteen days after the twelve-month anniversary of the most recently filed certification or updated certification.

CHECK ONE: ☐ Initial Certification ☐ 12 Month Anniversary Update (Multi-year contracts only.)
 ☐ Updated Certification because of change of information contained in the most recently filed certification or twelve-month anniversary update.

GIFT CERTIFICATION:

As used in this certification, the following terms have the meaning set forth below:

- 1) "Contract" means that contract between the State of Connecticut (and/or one or more of its agencies or instrumentalities) and the Contractor, attached hereto, or as otherwise described by the awarding State agency below;
- 2) If this is an Initial Certification, "Execution Date" means the date the Contract is fully executed by, and becomes effective between, the parties; if this is a twelve-month anniversary update, "Execution Date" means the date this certification is signed by the Contractor;
- 3) "Contractor" means the person, firm or corporation named as the contractor below;
- 4) "Applicable Public Official or State Employee" means any public official or state employee described in C.G.S. §4-252(c)(1)(i) or (ii);
- 5) "Gift" has the same meaning given that term in C.G.S. § 4-250(1);
- 6) "Principals or Key Personnel" means and refers to those principals and key personnel of the Contractor, and its or their agents, as described in C.G.S. §§ 4-250(5) and 4-252(c)(1)(B) and (C).

I, the undersigned, am a Principal or Key Personnel of the person, firm or corporation authorized to execute this certification on behalf of the Contractor. I hereby certify that, no gifts were made by (A) such person, firm, corporation, (B) any principals and key personnel of the person firm or corporation who participate substantially in preparing bids, proposals or negotiating state contracts or (C) any agent of such, firm, corporation, or principals or key personnel who participates substantially in preparing bids, proposals or negotiating state contracts, to (i) any public official or state employee of the state agency or quasi-public agency soliciting bids or proposals for state contracts who participates substantially in the preparation of bid solicitations or request for proposals for state contracts or the negotiation or award of state contracts or (ii) any public official or state employee of any other state agency, who has supervisory or appointing authority over such state agency or quasi-public agency.

I further certify that no Principals or Key Personnel know of any action by the Contractor to circumvent (or which would result in the circumvention of) the above certification regarding **Gifts** by providing for any other Principals, Key Personnel, officials, or employees of the Contractor, or its or their agents, to make a **Gift** to any Applicable Public Official or State Employee. I further certify that the Contractor made the bid or proposal for the Contract without fraud or collusion with any person.

CAMPAIGN CONTRIBUTION CERTIFICATION:

I further certify that, on or after January 1, 2011, neither the Contractor nor any of its principals, as defined in C.G.S. § 9-612(f)(1), has made any **campaign contributions** to, or solicited any contributions on behalf of, any exploratory committee, candidate committee, political committee, or party committee established by, or supporting or authorized to support, any candidate for statewide public office, in violation of C.G.S. § 9-612(f)(2)(A). I further certify that **all lawful campaign contributions** that have been made on or after January 1, 2011 by the Contractor or any of its principals, as defined in C.G.S. § 9-612(f)(1), to, or solicited on behalf of, any exploratory committee, candidate committee, political committee, or party committee established by, or supporting or authorized to support any candidates for statewide public office or the General Assembly, are listed below:

Lawful Campaign Contributions to Candidates for Statewide Public Office:

<u>Contribution Date</u>	<u>Name of Contributor</u>	<u>Recipient</u>	<u>Value</u>	<u>Description</u>

Lawful Campaign Contributions to Candidates for the General Assembly:

<u>Contribution Date</u>	<u>Name of Contributor</u>	<u>Recipient</u>	<u>Value</u>	<u>Description</u>

Sworn as true to the best of my knowledge and belief, subject to the penalties of false statement.

Printed Contractor Name

Printed Name of Authorized Official

Signature of Authorized Official

Subscribed and acknowledged before me this _____ day of _____, 20____.

Commissioner of the Superior Court (or Notary Public)

My Commission Expires



STATE OF CONNECTICUT

AFFIRMATION OF RECEIPT OF STATE ETHICS LAWS SUMMARY

Written or electronic affirmation to accompany a large State construction or procurement contract, having a cost of more than \$500,000, pursuant to Connecticut General Statutes §§ 1-101mm and 1-101qq

INSTRUCTIONS:

Complete all sections of the form. Submit completed form to the awarding State agency or contractor, as directed below.

CHECK ONE:

- ☐ I am a person seeking a large State construction or procurement contract. I am submitting this affirmation to the awarding State agency with my bid or proposal. [Check this box if the contract will be awarded through a competitive process.]
- ☐ I am a contractor who has been awarded a large State construction or procurement contract. I am submitting this affirmation to the awarding State agency at the time of contract execution. [Check this box if the contract was a sole source award.]
- ☐ I am a subcontractor or consultant of a contractor who has been awarded a large State construction or procurement contract. I am submitting this affirmation to the contractor.
- ☐ I am a contractor who has already filed an affirmation, but I am updating such affirmation either (i) no later than thirty (30) days after the effective date of any such change or (ii) upon the submittal of any new bid or proposal, whichever is earlier.

IMPORTANT NOTE:

Within fifteen (15) days after the request of such agency, institution or quasi-public agency for such affirmation contractors shall submit the affirmations of their subcontractors and consultants to the awarding State agency. Failure to submit such affirmations in a timely manner shall be cause for termination of the large State construction or procurement contract.

AFFIRMATION:

I, the undersigned person, contractor, subcontractor, consultant, or the duly authorized representative thereof, affirm (1) receipt of the summary of State ethics laws* developed by the Office of State Ethics pursuant to Connecticut General Statutes § 1-81b and (2) that key employees of such person, contractor, subcontractor, or consultant have read and understand the summary and agree to comply with its provisions.

* The summary of State ethics laws is available on the State of Connecticut's Office of State Ethics website.

Signature

Date

Printed Name

Title

Firm or Corporation (if applicable)

Street Address

City

State

Zip

Awarding State Agency

**STATE OF CONNECTICUT**

Written or electronic PDF copy of the written certification to accompany a large state contract pursuant to P.A. No. 13-162 (Prohibiting State Contracts With Entities Making Certain Investments In Iran)

Respondent Name: _____

INSTRUCTIONS:

CHECK ONE: ☐ Initial Certification.
☐ Amendment or renewal.

A. Who must complete and submit this form. Effective October 1, 2013, this form must be submitted for any large state contract, as defined in section 4-250 of the Connecticut General Statutes. 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.

Pursuant to P.A. No. 13-162, upon submission of a bid or prior to executing a large state contract, **the certification portion of this form must be completed** by any corporation, general partnership, limited partnership, limited liability partnership, joint venture, nonprofit organization or other business organization **whose principal place of business is located outside of the United States**. United States subsidiaries of foreign corporations are exempt. For purposes of this form, a "foreign corporation" is one that is organized and incorporated outside the United States of America.

Check applicable box:

- ☐ Respondent's principal place of business is within the United States or Respondent is a United States subsidiary of a foreign corporation. Respondents who check this box **are not required to complete the certification portion of this form**, but must submit this form with its Invitation to Bid ("ITB"), Request for Proposal ("RFP") or contract package if there was no bid process.
- ☐ Respondent's principal place of business is outside the United States and it is not a United States subsidiary of a foreign corporation. **CERTIFICATION required.** Please complete the certification portion of this form and submit it with the ITB or RFP response or contract package if there was no bid process.

B. Additional definitions.

- 1) "Large state contract" has the same meaning as defined in section 4-250 of the Connecticut General Statutes;
- 2) "Respondent" means the person whose name is set forth at the beginning of this form; and
- 3) "State agency" and "quasi-public agency" have the same meanings as provided in section 1-79 of the Connecticut General Statutes.

C. Certification requirements.

No state agency or quasi-public agency shall enter into any large state contract, or amend or renew any such contract with any Respondent whose principal place of business is located outside the United States and is not a United States subsidiary of a foreign corporation unless the Respondent has submitted this certification.

Complete all sections of this certification and sign and date it, under oath, in the presence of a Commissioner of the Superior Court, a Notary Public or a person authorized to take an oath in another state.

CERTIFICATION:

I, the undersigned, am the official authorized to execute contracts on behalf of the Respondent. I certify that:

- ☐ Respondent has made no direct investments of twenty million dollars or more in the energy sector of Iran on or after October 1, 2013, as described in Section 202 of the Comprehensive Iran Sanctions, Accountability and Divestment Act of 2010.
- ☐ Respondent has either made direct investments of twenty million dollars or more in the energy sector of Iran on or after October 1, 2013, as described in Section 202 of the Comprehensive Iran Sanctions, Accountability and Divestment Act of 2010, or Respondent made such an investment prior to October 1, 2013 and has now increased or renewed such an investment on or after said date, or both.

Sworn as true to the best of my knowledge and belief, subject to the penalties of false statement.

Printed Respondent Name

Printed Name of Authorized Official

Signature of Authorized Official

Subscribed and acknowledged before me this _____ day of _____, 20____.

Commissioner of the Superior Court (or Notary Public)

My Commission Expires

NOTICE TO BIDDERS
STATE OF CONNECTICUT
SOUTHERN CONNECTICUT STATE UNIVERSITY

1. BIDS AND REJECTION OF BIDS

Bids shall be submitted only on the prepared forms furnished for the specific project. In no event will bids or changes in bids made by telephone or telegraph be considered. Any bids showing any omission, alteration of form, additions not called for, and any conditional bids, alternative bids or bids showing irregularities of any kind will be rejected.

Any bid received after the scheduled closing time for the receipt of bids will be returned to the bidder unopened.

Any bid once deposited with the Purchasing Manager may only be withdrawn by letter of request, signed by the depositing bidder and presented to the Purchasing Manager prior to the time of opening of any bid for the project in question.

The Purchasing Manager reserves the right to waive technical defects in the bids; to reject any bids which do not conform to the terms and conditions described herein; to accept or reject any part of any bid, and to reject all bids and again invite bids.

2. BID SECURITY

Each bid must be accompanied by a **BID BOND** in the form described in the Notice To Bidders and having such Surety Company or companies as are acceptable to and approved by the University Representative, and as are authorized to do business in this State, for an amount not less than 10 percent (10%) of the bid; OR the bid may be accompanied by a **CERTIFIED CHECK** or a **CASHIER'S CHECK** drawn upon either a **STATE BANK AND TRUST COMPANY** or a **NATIONAL ASSOCIATION**, to the order of the "Comptroller,-Southern Connecticut State University". All checks and Bid Bonds submitted by unsuccessful bidders shall be returned to them after the bidder to whom the contract has been awarded has filed the required Performance and Labor and Materials bonds.

3. FORFEIT OF BID SECURITY

Failure of the bidder to file the required bonds within the specified time after the award, shall be just cause for the annulment of the award or of the contract, if executed, and it is to be understood by the bidder in the events of the annulment of the award, or of the contract, that the amount of the security deposited with the bid shall be forfeited to the use of Southern Connecticut State University, not as a penalty but for liquidated damages, any part or the whole of which may be used to make up the difference between the bid of the defaulting bidder and the bid of the next highest responsible qualified bidder to whom the work is finally awarded.

4. ADDENDA AND INTERPRETATIONS

No interpretations of the meaning of the plans, specifications or other contract documents will be made orally to any bidder. Every request for such interpretation should be in writing, addressed to the University Representative. To be given consideration, requests must be received by the time and date stated in the Instructions to Bidders. Any and all such interpretations and any supplemental instructions will be in the form of written addenda to the specifications which, if issued, **will be posted on SCSU's and DAS websites. This information can be viewed by accessing Southern Connecticut State University's website @ www.southernct.edu/purchasing/bids or DAS:@ <https://portal.ct.gov/das/ctsource/ctsource>**

Failure of any bidder to review any such addendum or interpretation shall not release any bidder of any obligations under his bid as submitted.

5. SECURITY FOR FAITHFUL PERFORMANCE

A. Performance Bond

The bidder awarded the contract shall within ten (10) days after the award thereof substitute for the check or bid bond accompanying his bid, an executed Performance Bond, prepared in the form of a Performance Bond, in the amount of 100 percent of the contract price, conditioned upon the faithful Performance of the contract, and having as surety thereto such surety company or companies as are acceptable to and approved by the University Representative and as are authorized to transact business in this state.

B. Labor and Material Bond

At this same time, the bidder awarded the contract shall submit to the University Representative an additional bond, prepared in the form of a Labor and Material Bond, in the sum of not less than 100 percent of the contract price, conditioned that the Contractor will promptly pay for all material furnished and labor supplied or performed in the prosecution of the work, whether or not the material or labor enters into and becomes a component part of the structure or structures to be erected or work to be performed under the contract and having as surety thereto such Surety Company or Companies as are acceptable to and approved by the University Representative and as are authorized to transact business in this State. Such additional bond shall be held by Southern Connecticut State University for the use of each party who, as subcontractor or otherwise, shall have furnished material or supplies or shall have performed labor in the prosecution of the work as herein provided and who has not been paid therefor. Such additional Bond shall provide specifically that any person may bring suit thereon in the name of the person suing, prosecute the same to the final judgment and have execution thereon for such sum or sums as may be justly due. Southern Connecticut State University shall not be liable to furnish counsel nor for the payment of any costs or expenses of any such suit. This bond is to be furnished pursuant to Section 49-41 of the Connecticut General Statutes.

The following Sections of the General Statutes are inserted for information concerning the Bond furnished under Section 49-41:

Section 49-41a

When any public work is awarded by a contract for which a payment bond is required by Section 49-41, the contract for such public work shall require the general or prime contractor, within thirty (30) days after payment to such contractor by the State or a municipality to pay any amount due any subcontractor, whether for labor performed or materials furnished, when such labor or materials furnished, when such labor or materials has been included in a requisition submitted by such contractor and paid by the State or a municipality. If payment is not made by the general or prime contractor within such period, the subcontractor shall set forth a claim against such contractor through notice by registered or certified mail. Ten (10) days after the receipt of such notice, the general or prime contractor shall be liable for interest on the amount due and owing subcontractors written demand will be required to place funds in the amount of such claim, plus interest of one (1) percent (1%), in an interest bearing escrow account in a bank in this state, provided such contractor may refuse to place such funds in escrow on the grounds that such subcontractor shall not have performed the work according to the terms of his or its employment, and provided further that in any litigation or arbitration to determine the validity of the subcontractor's claim, the contractor who so refuses shall pay the subcontractor's counsel fees and the interest herein provided if it shall be determined in any such proceeding that the subcontractor did, in fact perform the work according to the terms of his employment. No payment shall be withheld from a subcontractor for work performed because of a dispute between the general or prime contractor and another contractor or subcontractor. This section shall not be construed to prohibit progress payments prior to final payment of such contract and is applicable to all subcontractors for material whether they have contracted directly with the general or prime contractor or with some other subcontractor on such work.

Section 49-42

Suit On Bond; When and How Brought

- a) Every person who has furnished labor or material in the prosecution of the work provided for in such contract in respect of which a payment bond is furnished under the provisions for in such contract in ninety (90) days after the day on which the last of the labor was done or performed by him or material was furnished or supplied by him for which such claim is made, shall have the right to sue on such payment bond for the amount, or the balance thereof, unpaid at the time of institution of such suit and to prosecute such action to final execution and judgment for the sum or sums justly due him; provided any person having direct contractual relationship with a subcontractor but no contractual relationship express notice to such contractor within ninety (90) days from the date on which such person performed the last of the labor or furnished or supplied the last of the material for which such claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the material was furnished or supplied or for whom the labor was done or performed. Such notice shall be served by mailing the same by Registered or Certified Mail, postage prepaid, in an envelope addressed to the contractor at any address he maintains an office or conducts his business at or his residence.
- b) Every suit instituted under this section shall be brought in the name of the person suing, in the superior court for the country where the contract was to be performed, irrespective of the amount in controversy in such suit but no such suit shall be commenced after the expiration of one (1) year after the day on which the last of the labor was performed or material was supplied by him.
- c) The word "material" as used in Sections 49-41 to 49-43, inclusive, shall be construed to include the rental of equipment used in the prosecution of work provided for in such contract. (Underscored Ours)

6. CONNECTICUT SALES AND USE TAX

In accordance with section 12-412 of the Connecticut General Statutes, the State of Connecticut is exempt from the payment of excise, transportation, and sales taxes imposed by the Federal Government and/or the State. Such taxes must not be included in bid prices.

Non-resident contractor's attention is particularly called to Public Act 75-470 which pertains to bond requirements for purposes of the sales and use tax.

7. CONTRACT TIME LIMITS

For the purposes of this contract, wherever the words "working day" or "calendar" are used herein, the following definition shall apply:

a) **Working Day**

A working day is hereby defined as each consecutive day, including and following the date set for commencement of work, except Saturdays, Sundays and legal holidays and except those days on which, in the opinion of the University Representative, the contractor is prevented by inclement weather from proceeding with work on the major items under construction at the then current stage of the work for at least six hours with the usual force employed on these major items, provided however, that in the event the Owner directs or permits work to be performed on a Saturday, Sunday or legal holiday, then such day shall be considered a working day.

b) **Calendar Day**

A calendar day, as the name implies, shall be construed to mean each consecutive day in its order including Saturdays, Sundays, and legal holidays. The time allowed for the work to be done on a project will be computed on the basis of calendar days as defined but actual work will not be performed on Saturdays, Sundays, or legal holidays except by written direction or consent of the Owner.

8. PROHIBITING EMPLOYEE DISCRIMINATION BY CONTRACTOR

The contractor agrees and warrants that in the performance of this contract he 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, sex, mental retardation, or physical disability, including but not limited to, blindness, unless it 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 further agrees to provide the Commission on Human Rights and Opportunities with such information requested by the Commission concerning the employment practices and procedures of the contractor as related to the provisions of this article.

9. UNION LABOR

Attention is called to the fact that there may be construction work now being carried on at the site at which construction is contemplated being done. This fact must be kept in mind by all bidders submitting proposals for this work.

10. CERTIFIED PAYROLL

According to State Statue, PA 97-263, effective October 1, 1997, each employer subject to the prevailing wage law must file certified payrolls with the contracting agent including information, including but not limited to, employee names; occupations; hours worked; rates paid; and the employers compliance with various provisions of the law. An employer subject to the prevailing wage law must now file the weekly certified payroll on a monthly basis (rather than weekly) with the contracting agency.

Penalties: There are various civil, criminal, and administrative penalties for violations of the prevailing wage law. Failure to pay the prevailing rate is a crime which may be a felony depending upon the amount of unpaid wages. Knowingly filing a false certified payroll or failure to file a certified payroll is a Class D felony for which an employer may be fined up to five thousand dollars, imprisoned for up to five years, or both. Disregarding obligations under Connecticut General Statute section 31-53 may result in an administrative debarment which may preclude any firm, corporation, partnership, or association in which such person or firms have an interest from receiving an award of a contract until a period of up to three years have elapsed. Additionally, civil penalties of \$300 per violation of law may also be assessed upon the employer.

11. MINORITY & SMALL BUSINESS SET-ASIDE PROGRAM

State of Connecticut Set-Aside Program: The Proposer on this project shall be required to award not less than 25% of the total Contract Value to small businesses certified by the Department of Administrative Services and further will require contractors to subcontract 25% of that 25% or 6.25% of the total Contract Value to minority and women owned set-aside contractors certified by the Department of Administrative Services. These statutory goals represent the minimum values expected to be achieved by this program under Connecticut General Statutes Section 4a-60g. Participating contractor list may be obtained by going to www.das.state.ct.us/purchase/setaside.

Exceptions:

If a project involves a specialty trade, for which no registered contractor can qualify to submit a bid, then the Owner can award a contract to a non-registered contractor.

If a project involves a specialty trade, for which no registered contractor can qualify as a subcontractor, then the Owner can waive the 6.25% of the total Contract Value for the MBE, etc. requirement.

12. VIOLENCE IN THE WORKPLACE

Executive Order No. 16 (Violence in the Workplace) is a part of this contract.

OBJECTIVE CRITERIA FOR EVALUATING QUALIFICATIONS OF BIDDERS

SOUTHERN CONNECTICUT STATE UNIVERSITY
OBJECTIVE CRITERIA
ESTABLISHED FOR EVALUATING QUALIFICATIONS OF BIDDERS

THE BIDDER MUST:

1. Have on its payroll or must be able to prove that it customarily employs supervisory personnel of the type qualified to perform the kind of work called for in the bid specifications.
2. Demonstrate to the satisfaction of the awarding authority that it possesses the ability and capacity to successfully complete the project. If the bidder has satisfactorily performed work of similar size, scope and comparable dollar value to the kind called for in the bid specifications continuously during the past three (3) years, the bidder shall be deemed qualified for the purpose of this paragraph.*
3. Own or possess rented or leased equipment of the type customarily required by contractors in the performance of contract work and that such equipment, if needed, is available for the job bid on.
4. Have purchased materials over the past three (3) years from suppliers who customarily sell same in quantity to contractors.
5. Be financially responsible to perform the work bid on.
6. Be able to furnish references from architects, engineers or owners indicating that it has satisfactorily completed contract work of the nature bid on and in a timely manner, complete with exonerating evidence where delays were evident.
7. Be able to demonstrate expertise in the various types of major trades or work required on the project either through itself or at a minimum at least one supervisory employee (on its payroll).
8. Have adequate physical facilities in which and from which the work can be performed.
9. Demonstrate to the satisfaction of the awarding authority that there exists a previous record of a harmonious relationship with its subcontractors.
10. Demonstrate to the satisfaction of the awarding authority that on previous state projects, if any, the bidder has complied in good faith with the requirements of listing subcontractors as outlined in Section 4b-95 of the Connecticut General Statute on prior work undertaken for the State of Connecticut.

*If the bidder does not have the three (3) years as called for, then the bidder must include in the Bidders Qualifications all the facts that demonstrate the bidder's ability and capacity to perform the work.

Information provided on the Bidder's Qualifications Statement may be used in the evaluation and qualifications of past performances.

OBJECTIVE CRITERIA INTENTION

The intention of the Objective Criteria that is included in the specifications of this project is 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 project.

REVISED 3/89



STATE OF CONNECTICUT
NONDISCRIMINATION CERTIFICATION – Affidavit
By Entity
For Contracts Valued at \$50,000 or More

Documentation in the form of an affidavit signed under penalty of false statement by a chief executive officer, president, chairperson, member, or other corporate officer duly authorized to adopt corporate, company, or partnership policy that certifies the contractor complies with the nondiscrimination agreements and warranties under Connecticut General Statutes §§ 4a-60 and 4a-60a, as amended

INSTRUCTIONS:

For use by an entity (corporation, limited liability company, or partnership) when entering into any contract type with the State of Connecticut valued at \$50,000 or more for any year of the contract. Complete all sections of the form. Sign form in the presence of a Commissioner of Superior Court or Notary Public. Submit to the awarding State agency prior to contract execution.

AFFIDAVIT:

I, the undersigned, am over the age of eighteen (18) and understand and appreciate the obligations of

an oath. I am _____ of _____, an entity
Signatory's Title Name of Entity

duly formed and existing under the laws of _____.
Name of State or Commonwealth

I certify that I am authorized to execute and deliver this affidavit on behalf of

_____ and that _____
Name of Entity Name of Entity

has a policy in place that complies with the nondiscrimination agreements and warranties of Connecticut General Statutes §§ 4a-60 and 4a-60a, as amended.

Authorized Signatory

Printed Name

Sworn and subscribed to before me on this _____ day of _____, 20_____.

Commissioner of the Superior Court/ Notary Public

Commission Expiration Date

STATE OF CONNECTICUT
SOUTHERN CONNECTICUT STATE UNIVERSITY
BID PROPOSAL FORM

BID NUMBER: RFQ-23-SCSU-01
PROJECT TITLE: LYMAN CENTER ROOF REPLACEMENT – 2023
PROJECT NUMBER SCSU – 2022 - 04
DATE: March 16, 2023

Bid Packages should be sent electronically to procurement @southernct.edu

DATE: _____

PROPOSAL OF

BIDDER'S NAME

BIDDER'S ADDRESS

- 1.0 In accordance with Chapter 60 Part II of the Connecticut General Statutes, as amended, and pursuant to, and in compliance with your Invitation to Bid, the Notice to Bidders, the Contract, including the conditions thereto, the Bid Security, I (we) propose 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 our authority and received prior to the scheduled closing time for the receipt of the bids, 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 the said Bid Proposal Form, hereof.
- 2.0 The Lump Sum Base Bid by me (us) on the Bid Proposal Form includes all work indicated on the drawings and/or described in the specifications, except:
- 2.1 Unit Prices - NOT APPLICABLE FOR THIS PROJECT.
 - 2.2 Special Unit Prices - NOT APPLICABLE FOR THIS PROJECT.
 - 2.3 Work covered by Supplemental Bids as may be listed on the Bid Proposal Form and General Requirements.

- 3.0 I (we) acknowledge and agree to the following:
- 3.1 Unit Prices - NOT APPLICABLE FOR THIS PROJECT
 - 3.2 Special Unit Prices - NOT APPLICABLE FOR THIS PROJECT.
 - 3.3 Allowances – NOT APPLICABLE FOR THIS PROJECT.
 - 3.4 To use and accept the Supplemental Bids in Section 01 23 00, Division 1, as provided by the Contractor, when authorized by the Owner as scheduled in Section 7.6 of this Bid Proposal Form.
- 4.0 This Bid Proposal Form is submitted to and in compliance with the foregoing and following conditions and/or information:
- 4.1 **AWARD**
 - 4.1.1 All proposals shall be subject to provisions of the Notice to Bidders and for purpose of award, consideration shall be given only to Proposals submitted by qualified and responsible bidders.
 - 4.1.2 The award shall be evaluated using the lowest Total Lump Sum Bid as stated in Section 7.3 of this Bid Proposal Form, and any or all Supplemental Bids as stated in Section 7.5 of this Bid Proposal Form, taken sequentially, as applicable, provided funds are available. The award will also be made based on the “Objective Criteria for Evaluation of Qualifications of Bidders”
 - 4.1.3 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.
 - 4.2 **COMMENCEMENT AND FINAL COMPLETION OF WORK:(ARTICLE 4 GENERAL CONDITIONS)**
 - 4.2.1 The General Contractor shall commence Work, (Including any or all Supplemental Bids, if accepted) within five calendar (5) days, after issuance of Purchase Order.

4.2.2 The work is to be completed:

Contract Award – As soon as possible after Bid Opening

Renovation Demolition Start – May 22, 2023

Substantial Completion by – July 30, 2023

A Purchase Order will be issued soon after the winning bid is accepted, and the contract signed. It is expected that the **contract will be awarded soon after the bid is accepted.**

4.3 LIQUIDATED DAMAGES: (ARTICLE 8, GENERAL CONDITIONS)

4.3.1 The General Contractor shall be assessed **(\$300.00) Three Hundred Dollars in Liquidated Damages, per day for each calendar day** beyond the Date given for Final Completion of the Contract according to the two Contract Times given above.

4.4 CONTRACTORS INSURANCE REQUIRED:

4.4.1 The limits of liability for the Insurance required for this project shall be those listed in Section 00300, Certificate of Insurance, for projects under \$500,000.000.

4.4.2 SPECIAL HAZARDS INSURANCE REQUIRED:

Type "C" – Collapse

Type "X" – Explosion

Type "U" – Underground

4.4.3 BUILDERS RISK INSURANCE REQUIRED: Fire and Extended Coverage on a percent basis (Completed Value Form) on the insurable portion of the entire project. The policy or policies shall specifically state that they are for the benefit of and payable to, Southern Connecticut State University, the contractor, and all persons furnishing labor or labor and materials for the contract work, as their interests may appear.

- 4.5 The General Contractor on this project shall be required to perform not less than **25%** of the completed Contract Sum of the Work with its own forces.
- 4.5.1 The General Contractor on this project shall be required to award not less than **25 %** of the total Contract Sum to contractors who are certified and eligible to participate under The State of Connecticut Set-Aside Program for small contractors. Participating contractor list may be obtained by going to www.das.state.ct.us/purchase/setaside.
- 4.5.1.1 This requirement must be met even if the General Contractor is certified and eligible to participate in the Small Business Set-Aside Program. The apparent low bidder will have to submit, as part of his bid, a list of certified set aside contractors to be used on this project along with the dollar amounts to be paid to each, on the form provided, and a copy of their current certification must be attached. This information will be considered as part of your Bid Proposal Form and failure to comply with any portion of this requirement including but not limited to failure to list or meet the necessary dollar amount or percentage of the bid price will be cause to reject your bid.
- 4.5.2 Of the amount awarded for the set-aside program noted in paragraph 4.5.1 above, 25% of that 25%, or **6.25% of the Total Contract Value** must be awarded to woman or minority owned, in accordance with Connecticut General Statutes Section 4a-60g.
- 4.5.2.1 The apparent low bidder will have to submit, as part of the bid, a list of certified women or minority contractors to be used on this project along with the dollar amounts to be paid to each, on the form provided, and a copy of their current certification must be attached. See Schedules 4.5.3 & 4.5.4 below. This information will be considered as part of your Bid Proposal Form and failure to comply with any portion of this requirement, including but not limited, to failure to list or meet the necessary dollar amount or percentage of the bid price will be cause to reject your bid.

4.5.3 Schedule 4.5.3 & 4.5.4

Certified and Eligible Minority Business Enterprise Subcontractor

NOTE: THIS INFORMATION HAS TO BE SUBMITTED NOW AS PART OF THE BID FORM. .

SCHEDULE 4.5.3 – LISTED WOMEN OR MINORITY BUSINESS ENTERPRISES	
1.	<div>Name of Subcontractor</div> <div>Address</div> <div>Contact PersonPhone No</div> <div>FEIN No.Fax No.</div> <div>Amount Dollars\$ <input type="text"/><input type="text"/><input ,="" <input="" type="text"/><input type="text"/><input ,="" <input="" type="text"/><input type="text"/><input .="" <input="" type="text"/><input type="text"/> (Place figures in appropriate boxes.) DOLLARS</div> <div>Certification Exp. Date::</div>

2.	<div>Name of Subcontractor</div> <div>Address</div> <div>Contact PersonPhone No</div> <div>FEIN No.Fax No.</div> <div>Amount Dollars\$ <input type="text"/><input type="text"/><input ,="" <input="" type="text"/><input type="text"/><input ,="" <input="" type="text"/><input type="text"/><input .="" <input="" type="text"/><input type="text"/> (Place figures in appropriate boxes.) DOLLARS</div> <div>Certification Exp. Date::</div>
----	---

3.	
Name of Subcontractor	
Address	
Contact Person	Phone No
FEIN No.	Fax No.
Amount Dollars	\$ <input type="text"/> <input type="text"/> <input type="text"/> , <input type="text"/> <input type="text"/> <input type="text"/> , <input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> (Place figures in appropriate boxes.) DOLLARS
Certification Exp. Date::	

4.	
Name of Subcontractor	
Address	
Contact Person	Phone No
FEIN No.	Fax No.
Amount Dollars	\$ <input type="text"/> <input type="text"/> <input type="text"/> , <input type="text"/> <input type="text"/> <input type="text"/> , <input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> (Place figures in appropriate boxes.) DOLLARS
Certification Exp. Date::	

SCHEDULE 4.5.4 – SET-ASIDE WORKSHEET						
	Subcontractor Name	Class of Work	SBE	MBE/WBE	General Contractor Self-Performing \$\$	Subcontract
1					\$	
2						\$
3						\$
4						\$
5						\$
6						\$
7						\$
8						\$
9	Prime Contractor Total				0	
10	SBE Subtotal	Add SBE subcontract amounts from above list and enter at right.				\$
11	MBE/WBE Subtotal	Add MBE/WBE subcontract amounts from the list and enter total to the right				\$
12	Contract Value	Enter total lump sum base bid and accepted supplemental bids from bid submittal form.				\$
13	Prime Contractor % and \$\$\$\$ Must be minimum 25% of line 12					%
14	SBE Percentage	Divide line 10 by line 12. Enter % to the right Must be minimum 25% of line 12				%
15	MBE/WBE Percentage	Divide line 11 by line 14. Enter % to the right. Must be minimum 6.25% of line 12				%
Vendor Company Name _____ Authorized signature _____ Date _____						

- 4.6 BIDDERS' QUALIFICATIONS STATEMENT AND OBJECTIVE CRITERIA FOR EVALUATING QUALIFICATIONS OF BIDDERS:
- 4.6.1 Information in regards to the General Contractors and the Named Subcontractors Bidders Qualification Statements is submitted and is made part of this Bid Proposal Form.
- 4.6.1.1 The General Contractor is required to complete the CHRO Contract Compliance Regulations & Bidder Qualification Statement (SCSU-4F).
- 4.6.1.2 Any Named Subcontractor as listed in schedule 7.5.1 of this Bid Proposal Form is required to complete the CHRO Contract Compliance Regulations & Bidder Qualification Statement (SCSU-4F. This information will be considered as part of your Bid Proposal Form and failure to comply with any portion of this requirement will be cause to reject your bid.
- 4.6.2 The Objective Criteria For Evaluating Bidders, that are included in the Contract Documents of this project, is to assure that 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.
- 4.7 NONDISCRIMINATION AND LABOR RECRUITMENT:
- 4.7.1 I (we) agree that the Contract awarded for this project shall be subject to Executive Orders No. Three & Seventeen, promulgated June 16, 1971 and February 15, 1973 respectively and to the Guidelines and Rules of the State Labor Commissioner implementing Executive Order No. Three and further agree to submit reports of Compliance Staffing on Labor Department Form E.O. 3-1, when and as requested.
- 4.8 FEDERAL & STATE WAGE DETERMINATIONS:
- 4.8.1 The U. S. Secretary of Labor's latest decision, and the State of Connecticut Wage Schedule are all incorporated in the documents. The higher rate (Federal or State) for any given occupation shall prevail if the bid price exceeds \$100,000. At the time of bidding, if the bid price exceeds \$100,000, the bidder agrees to accept the current prevailing wage scale as provided by the Connecticut Department of Labor for work performed at the site.

4.9 CERTIFICATION OF BIDDER REGARDING EQUAL EMPLOYMENT
OPPORTUNITY & NON-SEGREGATED FACILITIES:

4.9.1 The General Contractor and Subcontractors are hereby advised that upon acceptance of their bids they are obligated to fill out within 7 Calendar days the certification required pursuant to Executive Order No. 11246, and agree to certify to the compliance of non-segregated facilities.

4.10 EQUALS AND SUBSTITUTIONS:

4.10.1 All submissions requesting "Equal" and or Substitutions" shall be made by the Contractor in accordance with Article 15 of the General Conditions and Section 01 25 00 of the General Requirements. Bidders must submit requests for equals or substitutions prior to the receipt of the competitive bid. Substitutions will be allowed where the proposed substitute is approved as an equal material or products by the University Representative. All submissions shall contain all the information necessary for the Owner 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 Equal and or Substitution proposed, shall result in a rejection of the submission and request.

4.11 **DAS Prequalification Certificate:** The General Contractor is advised that for any proposal price estimated to be in excess of \$500,000.00, a valid Department of Administration Services Prequalification Certificate and Update Statement must accompany this proposal. Application for this program can be accessed by going to www.das.state.ct.us/BusinessSvs/PreQual/Prequal.asp

5.0 ACCOMPANYING THIS PROPOSAL IS:

5.1 A CERTIFIED CHECK drawn to the order of the "Controller, Southern Connecticut State University" in the amount of:

\$

--	--	--

 ,

--	--	--

 .

--	--

(Place figures in appropriate boxes.)

DOLLARS

(Written amount)

(A State Bank & Trust Co.) (A National Banking Assoc.)

Located in _____

Address, City & State

which it is understood shall be cashed and the proceeds thereof used so far as may be necessary to reimburse Southern Connecticut State University for losses and damages arising by virtue of my (our) failure to file the required Bonds and execute the required contract in this proposal is accepted by the Awarding Authority.

OR

- 5.2 A BID BOND having as surety thereto a Surety Company or Companies authorized to transact business in the State of Connecticut and made out in the penal sum of 10% of the TOTAL bid, or in the amount of:

\$

--	--	--

 ,

--	--	--

 .

--	--

(Place figures in appropriate boxes.)

DOLLARS

(Written amount)

- 6.0 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 reliance upon any representations of any employee, officer or agent of the State.

- 7.0 Each class of Work set forth in a separate section of the specifications pursuant to this Section shall be a subtrade designated in Schedule 7.5.1 of this Bid Proposal Form and shall be the matter of a subcontract made in accordance with the procedure set forth in this chapter.

- 7.1 The undersigned proposes to furnish all labor and materials required for

Project Numbers: SCSU-2022-04

Project Title: Lyman Center – Roof Replacement – 2023

In accordance with the accompanying Plans and Specifications.

Prepared by: Friar Architecture, Inc.

And

Office of Facilities Planning and Architectural Services

Southern Connecticut State University

for the Contract Sums specified in Section 7.3 subject to additions and deductions according to the terms of the specifications.

- 7.2 This Bid Proposal includes Addenda numbered _____.

- 7.2.1 The **Contractor is to fill in item 7.2 above**, acknowledging the number of Addenda that the Contractor is including in the Bid Proposal Form.

7.3 THE PROPOSED CONTRACT SUMS ARE AS FOLLOWS:

Lyman Center – Roof Replacement – 2023 - #SCSU-2022-04

\$

--	--

 ,

--	--	--

 ,

--	--	--

 .

--	--

(Place figures in appropriate boxes.)

DOLLARS

(Written Amount)

The Contract Sum must include:

- 7.3.1 In accordance with Section 4.5 of this Bid Proposal Form, the amount of Work performed by the General Contractor must be at least **Twenty-Five Percent (25%)** of the **TOTAL** Proposal Contract Sum.
- 7.3.2 Bid Prices to be held for ninety (90) days from bid opening.
- 7.3.3 UNIT PRICES – NOT APPLICABLE FOR THIS PROJECT

7.4 **The work to be performed by the General Contractor, with his own forces, for the TOTAL project, is as follows:**

\$

--	--

 ,

--	--	--

 ,

--	--	--

 .

--	--

(Place figures in appropriate boxes.)

- 7.4.1 By submitting this bid, the contractor accepts and meets the Drawings & Specifications in their entirety. Any exceptions and/or deviations must be listed below.
EXCEPTIONS/DEVIATIONS

7.5 Subcontractors and their price must be listed for the major trades identified in Schedule 7.5.1 below. (As per C. G. S. 4b-95)

NOTE;

THIS INFORMATION IS TO BE SUBMITTED NOW AS PART OF THE BID FORM

SCHEDULE 7.5.1 – NAMED SUBCONTRACTORS	
1. (General Trades)	<div style="border-bottom: 1px solid black; margin-bottom: 10px;"></div> <div style="text-align: right; padding-right: 20px;">Name of Subcontractor</div>
Address	<div style="border-bottom: 1px solid black; margin-bottom: 10px;"></div>
Contact Person	<div style="border-bottom: 1px solid black; margin-bottom: 10px;"></div> <div style="text-align: right; padding-right: 20px;">Phone No</div>
FEIN No.	<div style="border-bottom: 1px solid black; margin-bottom: 10px;"></div> <div style="text-align: right; padding-right: 20px;">Fax No.</div>
Amount Dollars	<div style="border-bottom: 1px solid black; margin-bottom: 10px;"></div> <div style="text-align: right; padding-right: 20px;">\$ <table border="1" style="display: inline-table; width: 40px; height: 20px; vertical-align: middle;"></table> , <table border="1" style="display: inline-table; width: 40px; height: 20px; vertical-align: middle;"></table> , <table border="1" style="display: inline-table; width: 40px; height: 20px; vertical-align: middle;"></table> . <table border="1" style="display: inline-table; width: 20px; height: 20px; vertical-align: middle;"></table> <small>(Place figures in appropriate boxes.)</small> <div style="text-align: right; padding-right: 20px;">DOLLARS</div></div>
Labor & Material Payment Bond:	<table border="1" style="display: inline-table; width: 40px; height: 20px; vertical-align: middle;"></table> %
Performance Bond:	<table border="1" style="display: inline-table; width: 40px; height: 20px; vertical-align: middle;"></table> %

2. (Roofing)	<div style="border-bottom: 1px solid black; margin-bottom: 10px;"></div> <div style="text-align: right; padding-right: 20px;">Name of Subcontractor</div>
Address	<div style="border-bottom: 1px solid black; margin-bottom: 10px;"></div>
Contact Person	<div style="border-bottom: 1px solid black; margin-bottom: 10px;"></div> <div style="text-align: right; padding-right: 20px;">Phone No</div>
FEIN No.	<div style="border-bottom: 1px solid black; margin-bottom: 10px;"></div> <div style="text-align: right; padding-right: 20px;">Fax No.</div>
Amount Dollars	<div style="border-bottom: 1px solid black; margin-bottom: 10px;"></div> <div style="text-align: right; padding-right: 20px;">\$ <table border="1" style="display: inline-table; width: 40px; height: 20px; vertical-align: middle;"></table> , <table border="1" style="display: inline-table; width: 40px; height: 20px; vertical-align: middle;"></table> , <table border="1" style="display: inline-table; width: 40px; height: 20px; vertical-align: middle;"></table> . <table border="1" style="display: inline-table; width: 20px; height: 20px; vertical-align: middle;"></table> <small>(Place figures in appropriate boxes.)</small> <div style="text-align: right; padding-right: 20px;">DOLLARS</div></div>
Labor & Material Payment Bond:	<table border="1" style="display: inline-table; width: 40px; height: 20px; vertical-align: middle;"></table> %
Performance Bond:	<table border="1" style="display: inline-table; width: 40px; height: 20px; vertical-align: middle;"></table> %

3. (Flashing and Sheet Metal)	
Name of Subcontractor	
Address	
Contact Person	Phone No
FEIN No.	Fax No.
Amount Dollars	\$ <input type="text"/> <input type="text"/> <input type="text"/> , <input type="text"/> <input type="text"/> <input type="text"/> , <input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> (Place figures in appropriate boxes.) DOLLARS
Labor & Material Payment Bond:	<input type="text"/> <input type="text"/> <input type="text"/> %
Performance Bond:	<input type="text"/> <input type="text"/> <input type="text"/> %

4. ()	
Name of Subcontractor	
Address	
Contact Person	Phone No
FEIN No.	Fax No.
Amount Dollars	\$ <input type="text"/> <input type="text"/> <input type="text"/> , <input type="text"/> <input type="text"/> <input type="text"/> , <input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> (Place figures in appropriate boxes.) DOLLARS
Labor & Material Payment Bond:	<input type="text"/> <input type="text"/> <input type="text"/> %
Performance Bond:	<input type="text"/> <input type="text"/> <input type="text"/> %

- 7.6 Any Supplemental Bids listed in schedule 7.6.1, 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 as scheduled. Supplemental Bids: Division 1, Section 01 23 00 of the General Requirements identifies and describes the Supplemental Bids as shown in Schedule 7.6.1.

SCHEDULE 7.6.1 – SUPPLEMENTAL BIDS	
Supplemental Bid No. 1	<p>Provide all labor, material, and equipment to complete the work noted below in accordance with the specifications and drawings.</p> <p>Supplemental Bid No. 1: Roof replacement with a new 30-year roofing system in lieu of the base bid roofing system.</p> <p>Add to the Contract Sum, the lump sum of:</p> <div style="display: flex; justify-content: space-between; align-items: flex-end;"><div style="text-align: right;">ADD:</div><div style="flex-grow: 1; border-bottom: 1px solid black; position: relative;"><div style="position: absolute; bottom: -10px; left: 50%; transform: translateX(-50%);">(Written Amount)</div></div><div style="text-align: right; padding-right: 20px;">Dollars</div><div style="text-align: right;">\$.</div></div>

SCHEDULE 7.6.1 – SUPPLEMENTAL BIDS	
Supplemental Bid No. 2	<p>Provide all labor, material, and equipment to complete the work noted below in accordance with the specifications and drawings.</p> <p>Supplemental Bid No. 2: Requires the cleaning of existing exterior face brick masonry as identified on the Drawings, and prescribed in the Specification Section 04 01 10.02 Exterior Masonry Cleaning and the application of Siloxane, penetrating water repellent per Specification Section 07 19 00 Water Repellents.</p> <p>Add to the Contract Sum, the lump sum of:</p> <div style="display: flex; justify-content: space-between; align-items: flex-end;"><div style="text-align: right;">ADD:</div><div style="flex-grow: 1; border-bottom: 1px solid black; position: relative;"><div style="position: absolute; bottom: -10px; left: 50%; transform: translateX(-50%);">(Written Amount)</div></div><div style="text-align: right; padding-right: 20px;">Dollars</div><div style="text-align: right;">\$.</div></div>

- 7.7 The undersigned agrees that, if selected as General Contractor, the General Contractor shall, within five (5) calendar days, legal State holidays excluded, after presentation thereof by the awarding authority, execute a Construction Contract, as outlined in the Project Manual, and in accordance with the terms of this Bid Proposal Form.
- 7.8 The undersigned agrees and warrants that they has made good faith efforts to employ minority business enterprises as Subcontractors and suppliers of materials under such Contract and shall 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.
- 8.0 A duly authorized representative of the Bidder or Bidder's partnership, firm, corporation or business organization must sign all Bid Proposals Forms.

(NO FACSIMILE SIGNATURE IS PERMITTED).
ALL INFORMATION BELOW IS TO BE FILLED IN BY THE BIDDER.

Project Number _____

Signed this _____ **day of** _____ **19** _____

Firm Name _____

Complete Legal Name

Address _____
Street City State

Telephone Number _____

Bidders Signature _____
Duly Authorized Title

END OF SECTION



Notice to Executive Branch State Contractors and Prospective State Contractors of Campaign Contribution and Solicitation Limitations

This notice is provided under the authority of Connecticut General Statutes §9-612 (f) (2) and is for the purpose of informing state contractors and prospective state contractors of the following law (italicized words are defined on the reverse side of this page).

CAMPAIGN CONTRIBUTION AND SOLICITATION LIMITATIONS

No *state contractor, prospective state contractor, principal of a state contractor or principal of a prospective state contractor*, with regard to a *state contract or state contract solicitation* with or from a state agency in the executive branch or a quasi-public agency or a holder, or principal of a holder, of a valid prequalification certificate, shall make a contribution to (i) an exploratory committee or candidate committee established by a candidate for nomination or election to the office of Governor, Lieutenant Governor, Attorney General, State Comptroller, Secretary of the State or State Treasurer, (ii) a political committee authorized to make contributions or expenditures to or for the benefit of such candidates, or (iii) a party committee (which includes town committees).

In addition, no holder or principal of a holder of a valid prequalification certificate, shall make a contribution to (i) an exploratory committee or candidate committee established by a candidate for nomination or election to the office of State senator or State representative, (ii) a political committee authorized to make contributions or expenditures to or for the benefit of such candidates, or (iii) a party committee.

On and after January 1, 2011, no state contractor, prospective state contractor, principal of a state contractor or principal of a prospective state contractor, with regard to a state contract or state contract solicitation with or from a state agency in the executive branch or a quasi-public agency or a holder, or principal of a holder of a valid prequalification certificate, shall **knowingly solicit** contributions from the state contractor's or prospective state contractor's employees or from a *subcontractor or principals of the subcontractor* on behalf of (i) an exploratory committee or candidate committee established by a candidate for nomination or election to the office of Governor, Lieutenant Governor, Attorney General, State Comptroller, Secretary of the State or State Treasurer, (ii) a political committee authorized to make contributions or expenditures to or for the benefit of such candidates, or (iii) a party committee.

DUTY TO INFORM

State contractors and prospective state contractors are required to inform their principals of the above prohibitions, as applicable, and the possible penalties and other consequences of any violation thereof.

PENALTIES FOR VIOLATIONS

Contributions or solicitations of contributions made in violation of the above prohibitions may result in the following civil and criminal penalties:

Civil penalties—Up to \$2,000 or twice the amount of the prohibited contribution, whichever is greater, against a principal or a contractor. Any state contractor or prospective state contractor which fails to make reasonable efforts to comply with the provisions requiring notice to its principals of these prohibitions and the possible consequences of their violations may also be subject to civil penalties of up to \$2,000 or twice the amount of the prohibited contributions made by their principals.

Criminal penalties—Any knowing and willful violation of the prohibition is a Class D felony, which may subject the violator to imprisonment of not more than 5 years, or not more than \$5,000 in fines, or both.

CONTRACT CONSEQUENCES

In the case of a state contractor, contributions made or solicited in violation of the above prohibitions may result in the contract being voided.

In the case of a prospective state contractor, contributions made or solicited in violation of the above prohibitions shall result in the contract described in the state contract solicitation not being awarded to the prospective state contractor, unless the State Elections Enforcement Commission determines that mitigating circumstances exist concerning such violation.

The State shall not award any other state contract to anyone found in violation of the above prohibitions for a period of one year after the election for which such contribution is made or solicited, unless the State Elections Enforcement Commission determines that mitigating circumstances exist concerning such violation.

Additional information may be found on the website of the State Elections Enforcement Commission, www.ct.gov/seec. Click on the link to "Lobbyist/Contractor Limitations."



DEFINITIONS

“State contractor” means a person, business entity or nonprofit organization that enters into a state contract. Such person, business entity or nonprofit organization shall be deemed to be a state contractor until December thirty-first of the year in which such contract terminates. “State contractor” does not include a municipality or any other political subdivision of the state, including any entities or associations duly created by the municipality or political subdivision exclusively amongst themselves to further any purpose authorized by statute or charter, or an employee in the executive or legislative branch of state government or a quasi-public agency, whether in the classified or unclassified service and full or part-time, and only in such person's capacity as a state or quasi-public agency employee.

“Prospective state contractor” means a person, business entity or nonprofit organization that (i) submits a response to a state contract solicitation by the state, a state agency or a quasi-public agency, or a proposal in response to a request for proposals by the state, a state agency or a quasi-public agency, until the contract has been entered into, or (ii) holds a valid prequalification certificate issued by the Commissioner of Administrative Services under section 4a-100. “Prospective state contractor” does not include a municipality or any other political subdivision of the state, including any entities or associations duly created by the municipality or political subdivision exclusively amongst themselves to further any purpose authorized by statute or charter, or an employee in the executive or legislative branch of state government or a quasi-public agency, whether in the classified or unclassified service and full or part-time, and only in such person's capacity as a state or quasi-public agency employee.

“Principal of a state contractor or prospective state contractor” means (i) any individual who is a member of the board of directors of, or has an ownership interest of five per cent or more in, a state contractor or prospective state contractor, which is a business entity, except for an individual who is a member of the board of directors of a nonprofit organization, (ii) an individual who is employed by a state contractor or prospective state contractor, which is a business entity, as president, treasurer or executive vice president, (iii) an individual who is the chief executive officer of a state contractor or prospective state contractor, which is not a business entity, or if a state contractor or prospective state contractor has no such officer, then the officer who duly possesses comparable powers and duties, (iv) an officer or an employee of any state contractor or prospective state contractor who has *managerial or discretionary responsibilities with respect to a state contract*, (v) the spouse or a *dependent child* who is eighteen years of age or older of an individual described in this subparagraph, or (vi) a political committee established or controlled by an individual described in this subparagraph or the business entity or nonprofit organization that is the state contractor or prospective state contractor.

“State contract” means an agreement or contract with the state or any state agency or any quasi-public agency, let through a procurement process or otherwise, having a value of fifty thousand dollars or more, or a combination or series of such agreements or contracts having a value of one hundred thousand dollars or more in a calendar year, for (i) the rendition of services, (ii) the furnishing of any goods, material, supplies, equipment or any items of any kind, (iii) the construction, alteration or repair of any public building or public work, (iv) the acquisition, sale or lease of any land or building, (v) a licensing arrangement, or (vi) a grant, loan or loan guarantee. “State contract” does not include any agreement or contract with the state, any state agency or any quasi-public agency that is exclusively federally funded, an education loan, a loan to an individual for other than commercial purposes or any agreement or contract between the state or any state agency and the United States Department of the Navy or the United States Department of Defense.

“State contract solicitation” means a request by a state agency or quasi-public agency, in whatever form issued, including, but not limited to, an invitation to bid, request for proposals, request for information or request for quotes, inviting bids, quotes or other types of submittals, through a competitive procurement process or another process authorized by law waiving competitive procurement.

“Managerial or discretionary responsibilities with respect to a state contract” means having direct, extensive and substantive responsibilities with respect to the negotiation of the state contract and not peripheral, clerical or ministerial responsibilities.

“Dependent child” means a child residing in an individual's household who may legally be claimed as a dependent on the federal income tax of such individual.

“Solicit” means (A) requesting that a contribution be made, (B) participating in any fundraising activities for a candidate committee, exploratory committee, political committee or party committee, including, but not limited to, forwarding tickets to potential contributors, receiving contributions for transmission to any such committee, serving on the committee that is hosting a fundraising event, introducing the candidate or making other public remarks at a fundraising event, being honored or otherwise recognized at a fundraising event, or bundling contributions, (C) serving as chairperson, treasurer or deputy treasurer of any such committee, or (D) establishing a political committee for the sole purpose of soliciting or receiving contributions for any committee. Solicit does not include: (i) making a contribution that is otherwise permitted by Chapter 155 of the Connecticut General Statutes; (ii) informing any person of a position taken by a candidate for public office or a public official, (iii) notifying the person of any activities of, or contact information for, any candidate for public office; or (iv) serving as a member in any party committee or as an officer of such committee that is not otherwise prohibited in this section.

“Subcontractor” means any person, business entity or nonprofit organization that contracts to perform part or all of the obligations of a state contractor's state contract. Such person, business entity or nonprofit organization shall be deemed to be a subcontractor until December thirty first of the year in which the subcontract terminates. “Subcontractor” does not include (i) a municipality or any other political subdivision of the state, including any entities or associations duly created by the municipality or political subdivision exclusively amongst themselves to further any purpose authorized by statute or charter, or (ii) an employee in the executive or legislative branch of state government or a quasi-public agency, whether in the classified or unclassified service and full or part-time, and only in such person's capacity as a state or quasi-public agency employee.

“Principal of a subcontractor” means (i) any individual who is a member of the board of directors of, or has an ownership interest of five per cent or more in, a subcontractor, which is a business entity, except for an individual who is a member of the board of directors of a nonprofit organization, (ii) an individual who is employed by a subcontractor, which is a business entity, as president, treasurer or executive vice president, (iii) an individual who is the chief executive officer of a subcontractor, which is not a business entity, or if a subcontractor has no such officer, then the officer who duly possesses comparable powers and duties, (iv) an officer or an employee of any subcontractor who has managerial or discretionary responsibilities with respect to a subcontract with a state contractor, (v) the spouse or a dependent child who is eighteen years of age or older of an individual described in this subparagraph, or (vi) a political committee established or controlled by an individual described in this subparagraph or the business entity or nonprofit organization that is the subcontractor.

COMMISSION ON HUMAN RIGHTS AND OPPORTUNITIES
CONTRACT COMPLIANCE REGULATIONS
NOTIFICATION TO BIDDERS

(Revised 09/3/15)

The contract to be awarded is subject to contract compliance requirements mandated by [Sections 4a-60](#) and [4a-60a](#) of the Connecticut General Statutes; and, when the awarding agency is the State, [Sections 46a-71\(d\)](#) and [46a-81i\(d\)](#) of the Connecticut General Statutes. There are Contract Compliance Regulations codified at [Section 46a-68j-21 through 43](#) of the Regulations of Connecticut State Agencies, which establish a procedure for awarding all contracts covered by [Sections 4a-60](#) and [46a-71\(d\)](#) of the Connecticut General Statutes.

According to [Section 46a-68j-30\(9\)](#) of the Contract Compliance Regulations, 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.” “Minority business enterprise” is defined in [Section 4a-60](#) of the Connecticut General Statutes as a business wherein fifty-one percent or more of the capital stock, or assets belong to a person or persons: “(1) Who are active in 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](#).” “Minority” groups are defined in [Section 32-9n](#) of the Connecticut General Statutes as “(1) Black Americans . . . (2) Hispanic Americans . . . (3) persons who have origins in the Iberian Peninsula . . . (4) Women . . . (5) Asian Pacific Americans and Pacific Islanders; (6) American Indians . . .” An individual with a disability is also a minority business enterprise as provided by [Section 4a-60g](#) of the Connecticut General Statutes. The above definitions apply to the contract compliance requirements by virtue of [Section 46a-68j-21\(11\)](#) of the Contract Compliance Regulations.

The awarding agency will consider the following factors when reviewing the bidder’s qualifications under the contract compliance requirements:

- (a) the bidder’s success in implementing an affirmative action plan;
- (b) the bidder’s success in developing an apprenticeship program complying with [Sections 46a-68-1 to 46a-68-17](#) of the Administrative Regulations of Connecticut State Agencies, inclusive;
- (c) the bidder’s promise to develop and implement a successful affirmative action plan;
- (d) 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
- (e) the bidder’s promise to set aside a portion of the contract for legitimate minority business enterprises. [See Section 46a-68j-30\(10\)\(E\)](#) of the Contract Compliance Regulations.

INSTRUCTIONS AND OTHER INFORMATION

The following **BIDDER CONTRACT COMPLIANCE MONITORING REPORT** must be completed in full, signed, and submitted with the bid for this contract. The contract awarding agency and the Commission on Human Rights and Opportunities will use the information contained thereon to determine the bidders compliance to [Sections 4a-60](#) and [4a-60a](#) CONN. GEN. STAT., and [Sections 46a-68j-23](#) of the Regulations of Connecticut State Agencies regarding equal employment opportunity, and the bidder’s good faith efforts to include minority business enterprises as subcontractors and suppliers for the work of the contract.

1) Definition of Small Contractor

[Section 4a-60g](#) CONN. GEN. STAT. defines a small contractor as a company that has been doing business under the same management and control and has maintained its principal place of business in Connecticut for a one year period immediately prior to its application for certification under this section, had gross revenues not exceeding fifteen million dollars in the most recently completed fiscal year, and at least fifty-one percent of the ownership of which is held by a person or persons who are active in the daily affairs of the company, and have the power to direct the management and policies of the company, except that a nonprofit corporation shall be construed to be a small contractor if such nonprofit corporation meets the requirements of subparagraphs (A) and (B) of subdivision [4a-60g](#) CONN. GEN. STAT.

2) Description of Job Categories (as used in Part IV Bidder Employment Information) (Page 2)

MANAGEMENT: Managers plan, organize, direct, and control the major functions of an organization through subordinates who are at the managerial or supervisory level. They make policy decisions and set objectives for the company or departments. They are not usually directly involved in production or providing services. Examples include top executives, public relations managers, managers of operations specialties (such as financial, human resources, or purchasing managers), and construction and engineering managers.

BUSINESS AND FINANCIAL OPERATIONS: These occupations include managers and professionals who work with the financial aspects of the business. These occupations include accountants and auditors, purchasing agents, management analysts, labor relations specialists, and budget, credit, and financial analysts.

MARKETING AND SALES: Occupations related to the act or process of buying and selling products and/or services such as sales engineer, retail sales workers and sales representatives including wholesale.

LEGAL OCCUPATIONS: In-House Counsel who is charged with providing legal advice and services in regards to legal issues that may arise during the course of standard business practices. This category also includes assistive legal occupations such as paralegals, legal assistants.

COMPUTER SPECIALISTS: Professionals responsible for the computer operations within a company are grouped in this category. Examples of job titles in this category include computer programmers, software engineers, database administrators, computer scientists, systems analysts, and computer support specialists

ARCHITECTURE AND ENGINEERING: Occupations related to architecture, surveying, engineering, and drafting are included in this category. Some of the job titles in this category include electrical and electronic engineers, surveyors, architects, drafters, mechanical engineers, materials engineers, mapping technicians, and civil engineers.

OFFICE AND ADMINISTRATIVE SUPPORT: All clerical-type work is included in this category. These jobs involve the preparing, transcribing, and preserving of written communications and records; collecting accounts; gathering and distributing information; operating office machines and electronic data processing equipment; and distributing mail. Job titles listed in this category include telephone operators, bill and account collectors, customer service representatives, dispatchers, secretaries and administrative assistants, computer operators and clerks (such as payroll, shipping, stock, mail and file).

BUILDING AND GROUNDS CLEANING AND MAINTENANCE: This category includes occupations involving landscaping, housekeeping, and janitorial services. Job titles found in this category include supervisors of landscaping or housekeeping, janitors, maids, grounds maintenance workers, and pest control workers.

CONSTRUCTION AND EXTRACTION: This category includes construction trades and related occupations. Job titles found in this category include boilermakers, masons (all types), carpenters, construction laborers, electricians, plumbers (and related trades), roofers, sheet metal workers, elevator installers, hazardous materials removal workers, paperhangers, and painters. Paving, surfacing, and tamping equipment operators; drywall and ceiling tile installers; and carpet, floor and tile installers and finishers are also included in this category. First line supervisors, foremen, and helpers in these trades are also grouped in this category.

INSTALLATION, MAINTENANCE AND REPAIR: Occupations involving the installation, maintenance, and repair of equipment are included in this group. Examples of job titles found here are heating, ac, and refrigeration mechanics and installers; telecommunication line installers and repairers; heavy vehicle and mobile equipment service technicians and mechanics; small engine mechanics; security and fire alarm systems installers; electric/electronic repair, industrial, utility and transportation equipment; millwrights; riggers; and manufactured building and mobile home installers. First line supervisors, foremen, and helpers for these jobs are also included in the category.

MATERIAL MOVING WORKERS: The job titles included in this group are Crane and tower operators; dredge, excavating, and lading machine operators; hoist and winch operators; industrial truck and tractor operators; cleaners of vehicles and equipment; laborers and freight, stock, and material movers, hand; machine feeders and offbearers; packers and packagers, hand; pumping station operators; refuse and recyclable material collectors; and miscellaneous material moving workers.

PRODUCTION WORKERS: The job titles included in this category are chemical production machine setters, operators and tenders; crushing/grinding workers; cutting workers; inspectors, testers sorters, samplers, weighers; precious stone/metal workers; painting workers; cementing/gluing machine operators and tenders; etchers/engravers; molders, shapers and casters except for metal and plastic; and production workers.

3) Definition of Racial and Ethnic Terms (as used in Part IV Bidder Employment Information) (Page 3)

<p><u>White</u> (not of Hispanic Origin)-All persons having origins in any of the original peoples of Europe, North Africa, or the Middle East.</p> <p><u>Black</u> (not of Hispanic Origin)-All persons having origins in any of the Black racial groups of Africa.</p> <p><u>Hispanic</u>- All persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race.</p>	<p><u>Asian or Pacific Islander</u>- All persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands. This area includes China, India, Japan, Korea, the Philippine Islands, and Samoa.</p> <p><u>American Indian or Alaskan Native</u>- All persons having origins in any of the original peoples of North America, and who maintain cultural identification through tribal affiliation or community recognition.</p>
--	---

BIDDER CONTRACT COMPLIANCE MONITORING REPORT

PART 1 – Bidder Information

Company Name: Street Address: City & State: Chief Executive:	Bidder Federal Employer Identification Number: Or Social Security Number:
Major Business Activity: (brief description)	Bidder Identification (response optional/definitions on page 1) -Bidder is a small contractor? Yes No -Bidder is a minority business enterprise? Yes No (If yes, check ownership category) Black Hispanic Asian American American Indian/Alaskan Native Iberian Peninsula Individual(s) with a Physical Disability Female -Bidder is certified as above by State of CT? Yes No
Bidder Parent Company: (If any)	
Other Locations in CT: (If any)	

PART II - Bidder Nondiscrimination Policies and Procedures

1. Does your company have a written Affirmative Action/Equal Employment Opportunity statement posted on company bulletin boards? Yes No	7. Do all of your company contracts and purchase orders contain non-discrimination statements as required by Sections 4a-60 & 4a-60a Conn. Gen. Stat.? Yes No
2. Does your company have the state-mandated sexual harassment prevention in the workplace policy posted on company bulletin boards? Yes No	8. Do you, upon request, provide reasonable accommodation to employees, or applicants for employment, who have physical or mental disability? Yes No
3. Do you notify all recruitment sources in writing of your company's Affirmative Action/Equal Employment Opportunity employment policy? Yes No	9. Does your company have a mandatory retirement age for all employees? Yes No
4. Do your company advertisements contain a written statement that you are an Affirmative Action/Equal Opportunity Employer? Yes No	10. If your company has 50 or more employees, have you provided at least two (2) hours of sexual harassment training to all of your supervisors? Yes No N/A
5. Do you notify the Ct. State Employment Service of all employment openings with your company? Yes No	11. If your company has apprenticeship programs, do they meet the Affirmative Action/Equal Employment Opportunity requirements of the apprenticeship standards of the Ct. Dept. of Labor? Yes No N/A
6. Does your company have a collective bargaining agreement with workers? Yes No 6a. If yes, do the collective bargaining agreements contain non-discrimination clauses covering all workers? Yes No	12. Does your company have a written affirmative action Plan? Yes No If no, please explain.
6b. Have you notified each union in writing of your commitments under the nondiscrimination requirements of contracts with the state of CT? Yes No	13. Is there a person in your company who is responsible for equal employment opportunity? Yes No If yes, give name and phone number:

1. Will the work of this contract include subcontractors or suppliers? Yes No

1a. If yes, please list all subcontractors and suppliers and report if they are a small contractor and/or a minority business enterprise. (defined on page 1 / use additional sheet if necessary)

1b. Will the work of this contract require additional subcontractors or suppliers other than those identified in 1a. above? Yes No

PART IV - Bidder Employment Information

Date:

JOB CATEGORY*	OVERALL TOTALS	WHITE (not of Hispanic origin)		BLACK (not of Hispanic origin)		HISPANIC		ASIAN or PACIFIC ISLANDER		AMERICAN INDIAN or ALASKAN NATIVE	
		Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Management											
Business & Financial Ops											
Marketing & Sales											
Legal Occupations											
Computer Specialists											
Architecture/Engineering											
Office & Admin Support											
Bldg/ Grounds Cleaning/Maintenance											
Construction & Extraction											
Installation , Maintenance & Repair											
Material Moving Workers											
Production Occupations											
TOTALS ABOVE											
Total One Year Ago											
FORMAL ON THE JOB TRAINEES (ENTER FIGURES FOR THE SAME CATEGORIES AS ARE SHOWN ABOVE)											
Apprentices											
Trainees											

*NOTE: JOB CATEGORIES CAN BE CHANGED OR ADDED TO (EX. SALES CAN BE ADDED OR REPLACE A CATEGORY NOT USED IN YOUR COMPANY)

1. Which of the following recruitment sources are used by you? (Check yes or no, and report percent used)				2. Check (X) any of the below listed requirements that you use as a hiring qualification (X)		3. Describe below any other practices or actions that you take which show that you hire, train, and promote employees without discrimination
SOURCE	YES	NO	% of applicants provided by source			
State Employment Service					Work Experience	
Private Employment Agencies					Ability to Speak or Write English	
Schools and Colleges					Written Tests	
Newspaper Advertisement					High School Diploma	
Walk Ins					College Degree	
Present Employees					Union Membership	
Labor Organizations					Personal Recommendation	
Minority/Community Organizations					Height or Weight	
Others (please identify)					Car Ownership	
					Arrest Record	
					Wage Garnishments	

Certification (Read this form and check your statements on it CAREFULLY before signing). I certify that the statements made by me on this BIDDER CONTRACT COMPLIANCE MONITORING REPORT are complete and true to the best of my knowledge and belief, and are made in good faith. I understand that if I knowingly make any misstatements of facts, I am subject to be declared in non-compliance with Section 4a-60, 4a-60a, and related sections of the CONN. GEN. STAT.

(Signature)	(Title)	(Date Signed)	(Telephone)
-------------	---------	---------------	-------------

BIDDERS QUALIFICATIONS STATEMENT

PROJECT NUMBER: SCSU-2022-04

All bidders are required to file this form, properly completed, **WITH THEIR PROPOSAL**. Failure of a bidder to answer any question or provide required information may be grounds for the awarding authority to disqualify and reject their bid. If a question or request for information does not pertain to your organization in any way, use the symbol "NA" (Not Applicable). Use additional 8½" x 11" sheets with your letterhead as necessary.

Indicate exactly the name by which this organization is known:

NAME:

How many years has this organization been in business under its present business name?

YEARS:

If this organization has not always been a General Contractor, list the trade(s) that your firm customarily performed prior to the time that you became a General Contractor:

1.

2.

3.

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

1.

2.

3.

This firm is a: ☐ Corporation ☐ Partnership ☐ Sole Proprietorship
☐ Joint Venture ☐ Other (Please Specify)

Attach resumes of all supervisory personnel, such as Principals, Project Managers, and Superintendents who will be directly involved with projects on which you are now a bidder. Indicate the number of years of which they were in a Supervisory capacity.

List all sub-trades which your firm customarily performs with its own employees.

1. _____
2. _____
3. _____

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

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 OSHA violations which are called for elsewhere in this statement.)

1. ATTACHED _____ 2. N/A _____

List all willful or serious violations of any Occupational Safety and Health Act (OSHA) or of any standard, order or regulation promulgated pursuant to such act, during the three (3) 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?

1. _____

2. _____

3. _____

Has your organization had any criminal convictions related to the injury or death of any employee in the three (3) year period preceding the bid? Please list any such convictions below.

1. _____

2. _____

TRADE REFERENCES: Names, addresses, and telephone numbers of several firms with whom your organization has regular business dealings.

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

Dated at: _____ this _____ day of
_____ 201__.

Name of Organization: _____

Signature: _____

Print Name: _____

Title: _____

NOTARY STATEMENT:

Mr./Mrs./Ms. _____ being duly sworn, deposes and says that
he/she is the _____ of _____,

(Position or Title) (Name of Company/Firm)

and that the answers to the foregoing questions and all statements herein contained are true and correct.

Subscribed and sworn before me this _____ day of _____ 200__.

Notary Public: _____

My Commission Expires: _____ 200__.

BIDDERS QUALIFICATION STATEMENT

All construction projects your organization has completed in the past five (5) years or the twenty (20) projects most recently completed

(Please attach a separate sheet explaining any negative entry in these three columns.)

TITLE AND LOCATION	CONTR. AMOUNT	OWNER	DESIGNER	START DATE	FINISH DATE	ANY COMPLAINT AS TO QUALITY OR MANAGEMENT	NAME AND PHONE OF OWNER'S REP	NAME AND PHONE OF DESIGNER'S REP

BIDDERS QUALIFICATION STATEMENT

All construction projects your organization has completed in the past five (5) years or the twenty (20) projects most recently completed

(Please attach a separate sheet explaining any negative entry in these three columns.)

TITLE AND LOCATION	CONTR. AMOUNT	OWNER	DESIGNER	START DATE	FINISH DATE	ANY COMPLAINT AS TO QUALITY OR MANAGEMENT	NAME AND PHONE OF OWNER'S REP	NAME AND PHONE OF DESIGNER'S REP

ATTACHMENT 1
SOUTHERN CONNECTICUT STATE UNIVERSITY
PURSUANT TO CONNECTICUT PUBLIC ACTS 88-351 AND 89-253

- A. For the purposes of this section, "minority business enterprise" means any small contractor or supplier of materials fifty-one percent 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 CT. General Statutes 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.
- B. For purposes of this Section, "Commission" means the Commission on Human Rights and Opportunities.
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, mental retardation 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. 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, mental retardation, 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 worker's 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 CT. General Statutes Sections 46a-68e and 46a-68f, inclusive, and with each regulation or relevant order issued by said Commission pursuant to CT. General Statute 46a-56, as amended by Section 5 of Public Act 89-253, 46a-68e and 46a-68f.
 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 related to the provisions of this section and section 46a-56. 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 projects.

- C. 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.
- D. The Contractor shall develop and maintain adequate documentation, in a manner prescribed by the Commission, of its good faith efforts.
- E. The Contractor shall include the provisions of subsection (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 CT. General Statute Section 46a-56, as amended by Section 5 of Public Act 89-253; 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.
- F. The Contractor agrees to comply with the regulations referred to in this section as they exist on the date of this contract and as they may be adopted or amended from time to time during the term of this Contract and any amendments thereto.

Effective 7/1/89

ATTACHMENT 2
PROVISIONS OF THIS CONTRACT REQUIRED BY
CONNECTICUT PUBLIC ACT 91-58, SECTION 16

- A. 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.
- B. 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 worker's 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.
- C. The Contractor agrees to comply with each provision of this section and sections 46a-68e and 46a-68f of the general statutes and with each regulation or relevant order issued by said Commission pursuant to sections 46a-56, 46a-68e and 46a-68f of the general statutes.
- D. 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 related to the provisions of this section and section 46a-56 of the general statutes.
- E. 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 offer as the Commission may direct as a means of enforcing such provisions including sanctions for noncompliance in accordance with section 46a-56 of the general statutes; 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.

Minimum Rates and Classifications
for Building Construction

ID#: 23-45060

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 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: New Haven
State#: FAP#:
Project: Lyman Center Roof Replacement - 2023

CLASSIFICATION	Hourly Rate	Benefits
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**		
1c) Asbestos Worker/Heat and Frost Insulator	44.57	31.79
2) Boilermaker	45.21	29.05
3a) Bricklayer, Cement Mason, Concrete Finisher (including caulking), Stone Masons	39.4	34.62 + a
3b) Tile Setter	37.1	30.52
3c) Tile and Stone Finishers	30.0	25.30
3d) Marble & Terrazzo Finishers	31.07	24.23
3e) Plasterer	41.9	28.75

-----LABORERS-----

As of: February 15, 2023

4) Group 1: Laborers (common or general), acetylene burners, concrete specialists, wrecking laborers, fire watchers.	32.0	24.40
4a) Group 2: Mortar mixers, plaster tender, power buggy operators, powdermen, fireproofers/mixer/nozzleman (Person running mixer and spraying fireproof only).	32.25	24.40
4b) Group 3: Jackhammer operators/pavement breaker, mason tender (brick), mason tender (cement/concrete), forklift operators and forklift operators (masonry).	32.5	24.40
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.	33.0	24.40
4d) Group 5: Air track operator, sand blaster and hydraulic drills.	32.75	24.40
4e) Group 6: Blasters, nuclear and toxic waste removal.	35.0	24.40
4f) Group 7: Asbestos/lead removal and encapsulation (except it's removal from mechanical systems which are not to be scrapped).	33.0	24.40
4g) Group 8: Bottom men on open air caisson, cylindrical work and boring crew.	30.28	24.40
4h) Group 9: Top men on open air caisson, cylindrical work and boring crew.	29.74	24.40
4i) Group 10: Traffic Control Signalman	18.0	24.40
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.	36.07	26.15

As of: February 15, 2023

5a) Millwrights	37.02	27.66
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)	40.6	32.21+3% of gross wage
7a) Elevator Mechanic (Trade License required: R-1,2,5,6)	61.42	37.335+a+b
-----LINE CONSTRUCTION-----		
Groundman	26.5	6.5% + 9.00
Linemen/Cable Splicer	48.19	6.5% + 22.00
8) Glazier (Trade License required: FG-1,2)	40.78	23.40 + a
9) Ironworker, Ornamental, Reinforcing, Structural, and Precast Concrete Erection	39.7	38.77 + a
----OPERATORS----		
Group 1: Crane Handling or Erecting Structural Steel or Stone; Hoisting Engineer (2 drums or over). (Trade License Required)	50.27	26.80 + a
Group 1a: Front End Loader (7 cubic yards or over); Work Boat 26 ft. and Over	46.07	26.80 + a
Group 2: Cranes (100 ton rate capacity and over); Bauer Drill/Caisson. (Trade License Required)	49.91	26.80 + a
Group 2a: Cranes (under 100 ton rated capacity).	49.06	26.80 + a
Group 2b: Excavator over 2 cubic yards; Pile Driver (\$3.00 premium when operator controls hammer)	45.71	26.80 + a

As of: February 15, 2023

Group 3: Excavator; Gradall; 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 Finegrade. (slopes, shaping, laser or GPS, etc.). (Trade License Required)	44.86	26.80 + a
Group 4: Trenching Machines; Lighter Derrick; CMI Machine or Similar; Koehring Loader (Skooper); Goldhofer.	44.42	26.80 + a
Group 5: Specialty Railroad Equipment; Asphalt Spreader, 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 mandrel).	43.73	26.80 + a
Group 5 continued: Side Boom; Combination Hoe and Loader; Directional Driller.	43.73	26.80 + a
Group 6: Front End Loader (3 up to 7 cubic yards); Bulldozer (rough grade dozer).	43.38	26.80 + a
Group 7: Asphalt Roller; Concrete Saws and Cutters (ride on types); Vermeer Concrete Cutter; Stump Grinder; Scraper; Snooper; Skidder; Milling Machine (24" and under mandrel).	42.99	26.80 + a
Group 8: Mechanic; Grease Truck Operator; Hydroblaster; Barrier Mover; Power Stone Spreader; Welding; Work Boat Under 26 ft.; Transfer Machine; Rigger Foreman.	42.54	26.80 + a
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); Vacuum Excavation Truck and Hydrovac Excavation Truck (27 HG pressure or greater).	42.04	26.80 + a
Group 10: Vibratory hammer; ice machine; diesel and air, hammer, etc.	39.7	26.80 + a
Group 11: Conveyor, earth roller, power pavement breaker (whiphammer), robot demolition equipment.	39.7	26.80 + a

Group 12: Wellpoint Operator.	39.63	26.80 + a
Group 13: Compressor Battery Operator.	38.97	26.80 + a
Group 14: Elevator Operator; Tow Motor Operator (solid tire no rough terrain).	37.66	26.80 + a
Group 15: Generator Operator; Compressor Operator; Pump Operator; Welding Machine Operator; Heater Operator.	37.2	26.80 + a
Group 16: Maintenance Engineer.	36.46	26.80 + a
Group 17: Portable Asphalt Plant Operator; Portable Crusher Plant Operator; Portable Concrete Plant Operator; Portable Grout Plant Operator; Portable Water Filtration Plant Operator.	41.39	26.80 + a
Group 18: Power Safety Boat; Vacuum Truck; Zim Mixer; Sweeper; (Minimum for any job requiring a CDL license); Rigger; Signalman.	38.61	26.80 + a
-----PAINTERS (Including Drywall Finishing)-----		
10a) Brush and Roller	37.22	23.40
10b) Taping Only/Drywall Finishing	37.97	23.40
10c) Paperhanger and Red Label	37.72	23.40
10e) Blast and Spray	40.22	23.40
11) Plumber (excluding HVAC pipe installation) (Trade License required: P-1,2,6,7,8,9 J-1,2,3,4 SP-1,2)	47.03	34.05
12) Well Digger, Pile Testing Machine	37.26	24.05 + a

As of: February 15, 2023

Roofer: Cole Tar Pitch	43.5	22.30 + a
Roofer: Slate, Tile, Composition, Shingles, Singly Ply and Damp/Waterproofing	42.0	22.30 + a
15) Sheetmetal Worker (Trade License required for HVAC and Ductwork: SM-1,SM-2,SM-3,SM-4,SM-5,SM-6)	40.89	41.72
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)	47.03	34.05
-----TRUCK DRIVERS-----		
17a) 2 Axle, Helpers	31.16	28.78 + a
17b) 3 Axle, 2 Axle Ready Mix	31.27	28.78 + a
17c) 3 Axle Ready Mix	31.33	28.78 + a
17d) 4 Axle	31.39	28.78 + a
17e) 4 Axle Ready Mix	31.44	28.78 + a
17f) Heavy Duty Trailer (40 Tons and Over)	33.66	28.78 + a
17g) Specialized Earth Moving Equipment (Other Than Conventional Type on-the-Road Trucks and Semi-Trailers, Including Euclids)	31.44	28.78 + a
17h) Heavy Duty Trailer up to 40 tons	32.39	28.78 + a

As of: February 15, 2023

17i) Snorkle Truck	31.54	28.78 + a
18) Sprinkler Fitter (Trade License required: F-1,2,3,4)	47.55	28.96 + a
19) Theatrical Stage Journeyman	25.76	7.34

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*

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. 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.

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: February 15, 2023

As of: February 15, 2023

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): _____

BUILDING CONTRACTOR REPORTING FORM

In order to receive final payment for services, all general contractors and their subcontractors must supply the information requested on this form and submit these forms with their final invoice (P.S. 93-286).

1. SOUTHERN CONNECTICUT STATE UNIVERSITY – 7804

Project Title: _____

Project Number:

2. Federal Employer Identification Number: _____
(If FEIN number is not available, provide Social Security Number.)

3. Connecticut Tax Registration Number:

4. Type of work: _____ Goods or Services
Construction Contract

5. Name of Business:

6. Business Address: _____
(Street)

(City) (State) (Zip Code)

7. _____ General Contractor _____ Subcontractor

STATE OF CONNECTICUT
CERTIFICATE OF INSURANCE

This is to certify that the Company named below has issued the policies listed below, that these policies are written in accordance with the Company's standard policies and endorsements, except as indicated below or as noted in the attachments hereto, which policies and endorsements will be made available to Southern Connecticut State University upon request, that they provide coverage and limits of liability shown with respect to the insurance indicated that they are in force on this date, that all deductible amounts are indicated below, and that this Certificate is furnished in accordance with and for the purpose of satisfying the requirements of the State of Connecticut, Southern Connecticut State University, in connection with the award and performance of a contract or agreement with the State of Connecticut, Southern Connecticut State University.

1. Name of Insured:

2. Address of Insured:

3. Location and Description of Work:

4. Project Number:

Insurance Chart (See descriptions below chart)

5.	Kind and Type of Insurance	Policy Number	Effective Date	Expiration Date	IN DOLLARS		
					Coverage and Limits of Liability		
					<u>Single Limit</u>	<u>Each Accident</u>	<u>Aggregate</u>
5.1	Contractor's General Liability				1,000,000.	1,000,000.	2,000,000.
5.1a	SPECIAL HAZARD INSURANCE TYPE "C" – Collapse Structural Injury Type "X" – Explosion or Blast				1,000,000.	1,000,000.	2,000,000.

5.	Kind and Type of Insurance (continued)	Policy Number	Effective Date	Expiration Date	IN DOLLARS Coverage and Limits of Liability		
					<u>Single Limit</u>	<u>Each Accident</u>	<u>Aggregate</u>
5.2	Worker's Compensation (If Self insured, then Compensation Commissioner's Certificate Required)				STATUTORY		
5.2a	Contractual Employers Liability (See Items 6 & 7)				(See Description Below)		
5.3	Owners Protective Liability for and in the Name of the State of Connecticut (See Item 6)				1,000,000.	1,000,000.	2,000,000.
5.3a	Contractors Protective Liability				1,000,000.	1,000,000.	2,000,000.
5.3b	TYPE "U" - Underground Damage				N. A.	N. A.	N. A.
5.4	AUTOMOBILE LIABILITY Owned Automobiles Hired Automobiles Non-Owned Automobiles				Each Accident		
					\$1,000,000.		
5.5	BUILDERS RISK INSURANCE (Fire Extended Coverage)		AS DESCRIBED BELOW				
5.10	Umbrella Policy (As Needed)						

Insurance Description

- 5.1 Commercial General Liability: With Respect to the operations he/she performs, the contractor shall carry Commercial General Liability insurance in the amount of \$1,000,000
- &
- 5.1a combined single limit per occurrence for bodily injury, personal injury, and property damage. Coverage shall include Premises and Operations, Independent Contractors, Products and Completed Operations, Contractual Liability and Broad Form Property Damage coverage. Additionally, when necessary because of the scope of the project, the policy shall include explosion, collapse and underground coverage. If a general aggregate is used, the general aggregate limit shall apply separately to the project or the general aggregate limit shall be twice the occurrence limit.

- 5.2 Workers' Compensation and Employers Liability: With respect to all contractor operations
& and all those performed for him/her by sub-contractors, the contractor shall carry statutory
5.2a coverage in compliance with the Worker's Compensation laws of the State of Connecticut.
Coverage shall include Employer's Liability with minimum limits of \$100,000 each accident,
\$500,000 Policy Disease Limit, \$100,000 each employee.
- 5.3 Owners and Contractors Protective Liability Insurance: With respect to the operations the
& contractor performs, the contractor shall carry for and in behalf of the State of Connecticut,
5.3a an Owners and Contractors Protective Liability insurance policy for a limit of not less than
\$1,000,000 for all damages arising out of injury to or destruction of property in any one accident or
occurrence and subject to that limit per accident an aggregate limit of \$2,000,000 for all damages
arising out of injury or destruction of property during the policy period.
- 5.4 Automobile Liability: The operation of all motor vehicles, including those owned, hired or non-
owned, used in connection with the contract shall be covered by Automobile Liability insurance in
the amount of not less than \$1,000,000 for all damages arising out of any one accident or
occurrence. If a vehicle is not used in the execution of the contract then automobile coverage is not
required.
- 5.5 Builder's Risk Insurance: At its sole cost and expense, the contractor shall carry Builders' Risk
Insurance including but not limited to, Fire Vandalism, Theft, Lighting, Wind, and All Risk
coverage in the amount of the estimated value of improvement to the existing structure and/or new
building, but at a minimum, not less than the value of the contract. Such insurance should include
coverage for materials stored on the site but not yet made a permanent part of the structure and
property in transit. All deductibles or retentions will be the sole responsibility of the contractor. The
State of Connecticut is listed as a Loss Payee on the coverage.
6. Unless requested otherwise by the State it is agreed that the above named insurance company waives
governmental immunity as a defense and will not use the defense of governmental immunity in the
adjustment of claims or in the defense of any suit brought against the State, and it is further agreed that the
company will bill all premiums and audit charges earned under the protective liability policy to the above
named contractor.
7. The contractor shall at all times indemnify and save harmless the State of Connecticut, Southern
Connecticut State University 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 material men 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 of 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, material man, 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
ordered to start work or the actual start whichever occurs first until the completion as certified by the
Southern Connecticut State University.

Such insurance as is herein certified applies to all operations of the insured in connection with the work herein described at the locations stated.

Certificate from insurers must list State of Connecticut as an Additional Insured.

In the event of any restrictive amendment to, any change in or cancellation of any one or more of said policies the _____

(Insurance Company)

will give not less than thirty days written notice to the party to whom the certificate is issued of such amendment, change or cancellation.

Dated this _____ day of _____ 19 _____

Insurance Company

Address

Authorized Agency

By: _____

Authorized Agent

Original to be submitted to:

Richard Glasson
Purchasing Assistant
Southern Connecticut State University
Procurement Services. – Wintergreen Building – 1 Wintergreen Avenue
501 Crescent Street
New Haven, CT 06515
(203) 392-6702

END OF SECTION

**General Conditions of the Contract for Construction
For Design-Bid-Build
Connecticut Department of Administrative Services**

TABLE OF CONTENTS		
ARTICLE	TITLE	PAGE
1	Definitions	2
2	Conditions of Work	6
3	Correlation of Contract Documents	6
4	Commencement and Progress of Work	7
5	Submittals, Product Data, Shop Drawings and Samples	8
6	Separate Contracts	8
7	Cooperation of Trades	9
8	Damages	9
9	Minimum Wage Rates	10
10	Posting Minimum Wage Rates	10
11	Construction Schedules	10
12	Preference in Employment	11
13	Compensation for Changes in the Work	11
14	Deleted Work	14
15	Materials: Standards	14
16	Inspection and Tests	16
17	Royalties and Patents	16
18	Surveys, Permits, and Regulations	17
19	Protection of the Work, Persons and Property	17
20	Temporary Utilities	18
21	Correction of Work	18
22	Guarantees and Warranties	18
23	Cutting, Fitting, Patching, and Digging	18
24	Cleaning Up	19
25	All Work Subject to Control of the Commissioner	19
26	Authority of the Construction Administrator	19
27	Schedule of Values: Application for Payment	20
28	Partial Payments	20
29	Delivery of Statement Showing Amounts Due for Wages, Materials, and Supplies	21
30	Substantial Completion and Acceptance	21
31	Final Payment	22
32	Owner's Right to Withhold Payments	23
33	Owner's Right to Stop Work or Terminate Contract	23
34	Subletting or Assigning of Contract	25
35	Contractor's Insurance	25
36	Foreign Materials	27
37	Hours of Work	27
38	Claims	28
39	Diesel Vehicle Emissions Control	31
40	Disclosure of Records	32
41	Audit and Inspection of Plants, Places of Business, and Records	32
Appendix 1 – CT DAS 7048 General Contractor Retainage Reduction Request Form		33

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 and "Work Phase".

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.

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.

3.6 In accordance with C.G.S. Section 4a-1, 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.

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.

12.2 Should this Contract be for a public works 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 Sub- contractor'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 not be more than **seven and five-tenths percent (7.5%)** deducted from the amount of each Application for Payment to be retained by the Owner as Retainage until Acceptance of the Work.

28.2.1 The following criteria shall be utilized in the reduction of Retainage withheld: 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 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 DAS Project Manager's estimate of the remaining Work or **two and five-tenths percent (2.5%)**, whichever is greater. All requests for Retainage Reduction shall be done on **CT DAS Form 7048 General Contractor Retainage Reduction Request**, a sample of which can be found at the end of these 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 Section 28.3, a reduction of Retainage below **two and five-tenths 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.

28.3.11 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 Documents 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.

32.1.3 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 Termination for Convenience: Notwithstanding any provision or language in the Contract to the contrary, the State may terminate the Contract for convenience 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 for Convenience 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 for convenience 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 the Work.

33.3 Termination for Cause:

33.3.1 The Commissioner may give notice in writing to the Contractor and its surety of any particular delay, neglect, or default of the Contractor due to one or more of the following:

33.3.1.1 Failure to begin the Work within the time specified for same in the Contract Documents.

33.3.1.2 Failure to perform the Work with sufficient workmen, equipment or materials to ensure the prompt completion of the Work within the time specified in the Contract.

33.3.1.3 Unsuitable performance of the Work or failure to remedy or redo such work as DAS Project Manager shall reject as defective, unsuitable, or noncompliant with Contract requirements.

33.3.1.4 Failure or refusal to remove material rejected as defective, unsuitable, or noncompliant with Contract requirements.

33.3.1.5 Discontinuance of the suitable prosecution of the Work for a period of seventy-two (72) hours, excluding Saturdays, Sundays and holidays, without written authorization to do so from the DAS Project Manager.

33.3.1.6 Failure to recommence discontinued Work within forty-eight (48) hours (excluding Saturdays, Sundays and holidays) after being ordered to do so by the DAS Project Manager.

33.3.1.7 Insolvency, filing for bankruptcy or any act or occurrence that may render the Contractor financially incapable of completing the Work.

33.3.1.8 Failure to satisfy any final judgment against it for a period of thirty (30) days.

33.3.1.9 Making of any assignment for the benefit of creditors.

33.3.1.10 Violation of any provisions of the Contract Documents.

33.3.2 If the Contractor or its surety within a period of ten (10) days after the issuance of such notice does not proceed in conformance with the directions set forth therein, or fails to present a remedial plan of operation, satisfactory to the Commissioner, for remedying the acts or failures complained of in the notice, then the Commissioner may, at his discretion, order the surety to complete the Work or, without violating the Contract, take the right to control and prosecute the Work out of the hands of said Contractor and surety, terminating the Contract.

33.3.3 The Commissioner may appropriate or use any or all stockpiled materials and any and all equipment required by the Contract as may be suitable and necessary for completion of the Work and may enter into an agreement, either by negotiation or public letting, for the completion of said Contract by a party other than the Contractor, according to the terms and provisions thereof, or use such other methods or combinations thereof as in his or her opinion shall be required or desirable for the completion of the Work.

33.3.4 All costs and charges incurred by the Owner in connection with completing the Work, or as a result of the Contractor's default, shall be deducted from any monies due to or which may become due to the Contractor. In case such expense exceeds the sum that would have been payable under the Contract, then the Contractor and the surety shall be liable for, and shall pay to the State, the amount of the excess. 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 the 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 41 00 BID PROPOSAL FORM 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 Connecticut Department of Administrative Services/Construction Services, Office of Legal Affairs, Policy and Procurement, 450 Columbus Blvd, Suite 1302, Hartford, CT 06103-1835 unless otherwise directed in writing. For insurance definitions see Article 1 herein. Presented below is a narrative summary of the insurance required.

35.1.1 Commercial General Liability Insurance: 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 Administrative 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: 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 Insurance: 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 Umbrella Liability Insurance: Umbrella Liability Insurance, including a drop down provision covering any exhausted underlying aggregate limits in the specified amount shown below of combined single limit each occurrence in excess of the coverages described in subsections 35.1.1 Commercial General Liability Insurance, 35.1.3 Automobile Liability, and 35.1.5 Workers' Compensation and Employer's Liability. The State of Connecticut shall be named as an additional insured. The Umbrella Liability Insurance Limits for the Contractor are based on the Contract Value as specified in the following table.

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

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 the BID PROPOSAL FORM 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 the BID PROPOSAL FORM 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 Indemnification and Hold Harmless Provisions:

35.6.1 The Contractor shall indemnify, defend and hold harmless the State and its officers, representatives, agents, servants, employees, successors and assigns from and against any and all (1) Claims arising, directly or indirectly, in connection with the Contract, including the acts of commission or omission (collectively, the "Acts") of the Contractor or Contractor Parties; and (2) liabilities, damages, losses, costs and expenses, including but not limited to, attorneys' and other professionals' fees, arising, directly or indirectly, in connection with Claims, Acts or the Contract. The Contractor shall use counsel reasonably acceptable to the State in carrying out its obligations under this section. The Contractor's obligations under this section to indemnify, defend and hold harmless against Claims includes Claims concerning confidentiality of any part of or all of the Contractor's bid, proposal or any Records, any intellectual property rights, other proprietary rights of any person or entity, copyrighted or uncopyrighted compositions, secret processes, patented or unpatented inventions, articles or appliances furnished or used in the Performance.

35.6.2 The Contractor shall not be responsible for indemnifying or holding the State harmless from any liability arising due to the negligence of the State or any third party acting under the direct control or supervision of the State.

35.6.3 The Contractor shall reimburse the State for any and all damages to the real or personal property of the State caused by the Acts of the Contractor or any Contractor Parties. The State shall give the Contractor reasonable notice of any such Claims.

35.6.4 The Contractor's duties under this section shall remain fully in effect and binding in accordance with the terms and conditions of the Contract, without being lessened or compromised in any way, even where the Contractor is alleged or is found to have merely contributed in part to the Acts giving rise to the Claims and/or where the State is alleged or is found to have contributed to the Acts giving rise to the Claims.

35.6.5 The Contractor shall carry and maintain at all times during the term of the Contract, and during the time that any provisions survive the term of the Contract, sufficient general liability insurance to satisfy its obligations under this Contract. The Contractor shall name the State as an additional insured on the policy and shall provide a copy of the policy to the Agency prior to the effective date of the Contract. The Contractor shall not begin Performance until the delivery of the policy to the Agency. The Agency shall be entitled to recover under the insurance policy even if a body of competent jurisdiction determines that the Agency or the State is contributorily negligent.

35.6.6 Such obligations shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to any party or person described in General Conditions Article 35.

35.6.7 This section shall survive the Termination of the Contract and shall not be limited by reason of any insurance coverage.

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.

36.3 Buy American Act (BAA): Any "public building" or "public work" project funded by the American Recovery and Reinvestment Act of 2009 ("ARRA") requires that "all of the iron, steel, and manufactured goods used in the project" must be "produced in the United States" in accordance with the requirements of the Buy American Act (BAA).

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 A 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

39.1.2.2 Verified by EPA to provide a minimum emissions reduction of 20% particulate matter (PM₁₀), 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.

ARTICLE 40 **DISCLOSURE OF RECORDS**

40.1 This Contract may be subject to the provisions of C.G.S. Section 1-218. In accordance with this statute, each contract in excess of two million five hundred thousand dollars (\$2,500,000.00) between a public agency and a person for the performance of a governmental function shall (a) provide that the public agency is entitled to receive a copy of records and files related to the performance of the governmental function, and (b) indicate that such records and files are subject to the Freedom of Information Act (FOIA) and may be disclosed by the public agency pursuant to FOIA. No request to inspect or copy such records or files shall be valid unless the request is made to the public agency in accordance with FOIA. Any complaint by a person who is denied the right to inspect or copy such records or files shall be brought to the Freedom of Information Commission in accordance with the provisions of C.G.S. Sections 1-205 and 1-206.

ARTICLE 41 **AUDIT AND INSPECTION OF PLANTS, PLACES OF BUSINESS, AND RECORDS**

41.1 The State and its agents, including, but not limited to, the Connecticut Auditors of Public Accounts, Attorney General and State's Attorney and their respective agents, may, at reasonable hours, inspect and examine all of the parts of the Contractor's and Contractor Parties' plants and places of business which, in any way, are related to, or involved in, the performance of this Contract.

41.2 The Contractor shall maintain, and shall require each of the Contractor Parties to maintain, accurate and complete Records. The Contractor shall make all of its and the Contractor Parties' Records available at all reasonable hours for audit and inspection by the State and its agents.

41.3 The State shall make all requests for any audit or inspection in writing and shall provide the Contractor with at least twenty-four (24) hours' notice prior to the requested audit and inspection date. If the State suspects fraud or other abuse, or in the event of an emergency, the State is not obligated to provide any prior notice.

41.4 All audits and inspections shall be at the State's expense.


41.5 The Contractor shall keep and preserve or cause to be kept and preserved all of its and Contractor Parties' Records until three (3) years after the latter of (i) final payment under this Agreement, or (ii) the expiration or earlier termination of this Agreement, as the same may be modified for any reason. The State may request an audit or inspection at any time during this period. If any Claim or audit is started before the expiration of this period, the Contractor shall retain or cause to be retained all Records until all Claims or audit findings have been resolved.

41.6 The Contractor shall cooperate fully with the State and its agents in connection with an audit or inspection. Following any audit or inspection, the State may conduct and the Contractor shall cooperate with an exit conference.

41.7 The Contractor shall incorporate this entire Section verbatim into any contract or other agreement that it enters into with any Contractor Party.

END

Appendix 1

	7048 General Contractor (GC) Retainage Reduction Request <small>Page 1 of 1</small>
---	---

To: Department of Administrative Services (DAS) Construction Services
Office of Legal Affairs, Policy and Procurement
450 Columbus Blvd, Suite 1302 – North Tower
Hartford, CT 06103

From: General Contractor (GC)

Subject: DAS Project Number:
DAS Project Name:
Reduction of Retainage at: Percent (%) Project Completion
Date:

In accordance with the General Conditions, Article 28 Progress Payments,

hereby requests a reduction of retainage from % to %.

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 ninety (90%) Percent.
- ☐ Timely submission of an appropriate and complete CPM Schedule, 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 payment of the Work.
- ☐ Timely and proper submission of all required Contract Documents 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 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 change orders have been invoiced.
- ☐ All Change Order requests for payment are current.
- ☐ The Work is being performed in a clean worksite in accordance with the Contract Documents.
- ☐ All Subcontractor payments are current at the time of reduction request.
- ☐ GC is in compliance with all other provisions of the contract.

General Contractor Certification:	<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value=""/>
	<small>(Written Name)</small>	<small>(Signature)</small>	<small>(Date)</small>
Project Manager Recommendation:	<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value=""/>
	<small>(Written Name)</small>	<small>(Signature)</small>	<small>(Date)</small>
ADPM Approval:	<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value=""/>
	<small>(Written Name)</small>	<small>(Signature)</small>	<small>(Date)</small>
DAS Chief Architect or Authorized Representative:	<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value=""/>
	<small>(Written Name)</small>	<small>(Signature)</small>	<small>(Date)</small>

END

SUPPLEMENTARY GENERAL CONDITIONS

The following supplements modify the State of Connecticut, "General Conditions of the Contract for Construction,. Where a portion of the General Conditions is modified or deleted by these Supplementary Conditions, the unaltered portions of the General Conditions shall remain in effect.

ARTICLE 1 DEFINITIONS

MODIFY as follows:

1.20 **DELETE** the title and definition "COMMISSIONER". All references to "Commissioner" in the General Conditions shall be replaced by "Owner" See Section 145, for definition of "Owner" Note that Article 25 is modified below by these Supplementary Conditions.

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

ADD the following definition;

OWNER OR DEPARTMENT: Southern Connecticut State University, acting through its University Representative or specifically authorized Construction Administrator, Department personnel, or agent

1.65a **ADD** the following definition;

UNIVERSITY REPRESENTATIVE: The authorized representative for Southern Connecticut State University to act in matters involving revoking, altering, enlarging or relaxing any requirement of the contract documents.

ARTICLE 25 ALL WORK SUBJECT TO CONTROL OF THE COMMISSIONER

MODIFY as follows:

ADD the Following new Title:

ALL WORK SUBJECT TO CONTROL OF THE OWNER

- 25.1 **DELETE** this section: “The Commissioner hereby declares..... herein shall guide the Project Manager.”

ADD the following section:

“The Owner hereby declares that the University Representative is the Owner’s only authorized representative to act in matters involving the Owner’s or Architect’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 Owner. In all such matters, the provisions of Articles 13 and 14 herein shall guide the University Representative.”

- 25.2 All references to “Commissioner” shall be replaced by “Owner”
thru
25.5:

END OF SECTION

DIVISION 01 GENERAL REQUIREMENTS (Small Projects)		
Section No.	Title	Page No.
01 00 00	SUMMARY	
01 11 00	Summary of Work	
01 11 13	Work Covered By Contract Documents	
01 12 16	Work Sequence - Phase(s);	
01 12 19	Contract Interface	
01 14 00	Work Restrictions	
01 14 16	Coordination With Occupants	
01 20 00	PRICE AND PAYMENT PROCEDURES	
01 21 00	Allowances (NOT USED)	
01 22 00	Unit Prices – General (NOT USED)	
01 23 00	Supplemental Bids	
01 25 00	Substitution Procedures	
01 26 00	Contract Modification Procedures	
01 29 76	Progress Payment Procedures	
01 30 00	ADMINISTRATIVE REQUIREMENTS	
01 31 13	Project Coordination	
01 31 19	Project Meetings	
01 32 16	Construction Progress Schedules	
01 33 00	Submittal Procedures	
01 35 16	Alteration Project Procedures	
01 35 53	Security Procedures	
01 40 00	QUALITY REQUIREMENTS	
01 42 16	Definitions	
01 42 19	Referenced Standards	
01 45 00	Quality Control	
01 15 00	TEMPORARY FACILITIES AND CONTROLS	
01 51 13	Temporary Electricity And Lighting	
01 51 16	Temporary Fire Protection	
01 51 33	Temporary Telecommunications	
01 51 36	Temporary Water	
01 52 13	Field Offices And Sheds	
01 52 19	Temporary Sanitary Facilities	
01 54 00	Construction Aids	
01 55 16	Haul Routes	
01 56 00	Temporary Barriers And Enclosures	
01 56 43	Temporary Protection	
01 57 19	Temporary Environmental Controls	

01 60 00 PRODUCT REQUIREMENTS

01 60 00 Product Requirements

01 70 00 EXECUTION AND CLOSEOUT PROCEDURES

01 73 29 Cutting and Patching
01 74 13 Progress Cleaning
01 77 00 Closeout Procedures
01 78 30 Warranties And Bonds

01 10 00 SUMMARY

A. **Summary:** Section 01 10 00 Summary contains the following Subsections:

01 11 00 Summary of Work
01 11 13 Work Covered By Contract Documents
01 12 16 Work Sequence - Phase(s);
01 12 19 Contract Interface
01 14 00 Work Restrictions
01 14 16 Coordination With Occupants

01 11 00 SUMMARY OF WORK

- 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. **Project Number:** SCSU-2022-04.
- C. **Project Title:** Lyman Center – Roof Replacement – 2023.
It is to be completed and ready for use by the Owner and Agency within the Contract Time specified in Division 00, Bid Proposal Form.
- D. **Project Location:** Southern Connecticut State University, located in Hamden & New Haven, Connecticut.

E. The Project Description:

SCHEDULE FOR LYMAN CENTER FOR SUMMER 2023

May 22, 5p: GWCC Nurse Pinning
May 25-26, 8a-5p: True Colors Conference
June 2, 6p: NHSO
Jun 5-6, 5p: NH Adult Ed
June 10-11, A&I: All day
June 12, 8a-12p: SCSU NSO
June 14, 8a-5p: Eli Whitney Rehearsal & Grad
June 15, 8a-12p: SCSU NSO
June 17-18, All day: A&I
June 20, 5p: Tia Russell Dance
June 21, 8a-12p: SCSU NSO
June 21, 5p: Tia Russell Dance
June 22, 5p: A&I
June 23, 5p: Tia Russell Dance
June 24, 5p: Tia Russell Dance
June 25, 8a-12p: SCSU NSO
June 28, 8a-12p: SCSU NSO
July 3- Aug 17 Elm Shakespeare (8a-10p) Not on Mainstage. Drama Lab, Green Room,
Loading dock area, and scene shop.
July 25, 8a-1p: SCSU NSO
July 28-30: United Methodist Regional Church Retreat

The Work consists of the Removal of the existing single ply EPDM roof system installed on sections of tectum, concrete and metal decking. Replacement with a new 30-year roofing system to include the following work: all existing insulation will be removed and the deck and perimeter blocking inspected for damage, the cementitious insulating fill used to create the roof slope and crickets will need to be inspected to ensure its integrity, and removed as required, to be replaced with a tapered rigid insulation system, installation of a vapor barrier to the deck, insulation to meet the Energy Code and a secondary roof drainage system will be installed, a system of parapets at the roof perimeter(s). All work to comply with FM Global requirements.

1. The work is subject to 'quiet' and 'no work' days/times for scheduled use by the university. Re: 00 32 16. The contractor will maintain quiet conditions a minimum of 1 hour before and 1 hour after scheduled events and will perform no work during the events. At all times, the Contractor shall make-safe all areas of the work accessible to the university and the public. All items to be properly disposed of.
2. This Project **does not exceed** the Threshold Limits as defined by the Connecticut General Statutes.

01 11 13	WORK COVERED BY CONTRACT DOCUMENTS
-----------------	---

- 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 Work includes but is not limited to the following:
 1. See above Section 01 11 00 SUMMARY OF WORK.

- C. The Contractor will include in his bid, all items required in order to carry out the intent of the work as described, shown and implied in the Contract Documents.
- D. 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.
- E. The Work will be constructed under a single lump sum total price of the Bid including any Supplemental Buds.
- F. **Examination Of Site:**
1. It is not the intent of the Documents to show all existing conditions. All contractors are advised to visit and examine the site with the Construction Administrator prior to submitting bids.
 2. Contractors should investigate and satisfy themselves as to the conditions affecting the work, including but not restricted to those bearing upon transportation, disposal, handling and storage of materials, availability of labor, water, electric power, uncertainties of weather, roads or similar physical conditions of the ground, the character of equipment, and facilities needed preliminary to and during the prosecution of the Work. The Contractor should further satisfy 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/herself with the available information shall not relieve him from the responsibility for estimating properly the difficulty and cost of successfully performing the Work.
 3. **Pre-Bid Conference:**
A Pre-Bid Conference and tour of the site will be conducted.
- G. **Project Documents:**
1. The Specifications and Drawings are intended to describe and illustrate the materials and labor necessary for the work of this Project.
- H. 1. If additional copies of the drawings are wanted, they will be available, at the direct additional cost of their reproduction, to the contractor.
- I. **Waste Management Goals:**
1. The Contractor shall use all means available to divert, to the greatest extent practical and economically feasible, construction waste from landfills and incinerators.
 2. Of the inevitable waste that is generated, as many of the waste materials as economically feasible shall be recycled. Waste disposal in landfills shall be minimized.
 3. With regard to these goals, the Contractor shall develop, for the Construction Administrator's review, a Waste Management Plan for this Project. Contractor **will be required** to provide tonnage report from the hauler/waste management company for any recycled material.
- If needed, the **University Recycling Coordinator** can provide resources for effective recycling procedures, recycling companies, and haulers for various commodities'
Contact:
Heather Stearns
Office of Sustainability
(203) 392-6931
stearnsh1@southerct.edu

4. Take a pro-active, responsible role in management of construction waste and require all subcontractors, vendors and suppliers to participating in the effort. Establish a construction waste management program that includes the following categories:
 - a. Minimizing packaging waste.
 - b. Recycling.
 - c. Disposal.

01 12 16 WORK SEQUENCE - PHASE(S)

- 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 One Phase. Work shall be substantially complete, ready for occupancy, as noted on the Bid Form.

01 12 19 CONTRACT INTERFACE

- 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. **Owner & Agency:** The Owner & Agency is the Southern Connecticut State University, State of Connecticut.
 1. The University Representative is: Peter Visentin, AIA, Director, Facilities Planning and Architectural Services, located at 615 Fitch Street, Hamden, CT 06514. Phone: 203-392-6055; E-mail: visentinp1@southernct.edu.
 2. The Board of Regents for Connecticut State Colleges and Universities (CSCU) representative is: Todd S. Lukas, Director of Facilities, Planning and Engineering, located at 61 Woodland Street, Hartford, CT 06105. Phone: 860-462-8701. E-mail: tlukas@commnet.edu.
 3. The University and CSSU Representatives are the authorized representatives for Southern Connecticut State University to act in matters involving revoking, altering, enlarging or relaxing any requirement of the contract documents.
 4. References in this project manual to Project Manager or Agency Representative or Project Coordinator means the University Representatives as defined above.
- C. **Architect:** The Consulting Architectural Firm is **Friar Architecture, Inc.** and is located at **21 Talcott Notch Road, Farmington, CT 06032** The Project Manager representing the firm for this project is **Paul Hohenthal**. Phone: **860-678-1291**; Email: **peh@friar.com**
 1. The Engineer or their accredited representative is referred to in the Contract Documents as "Architect" or "Architects" or "Engineer" or "Engineers" or by pronouns which imply them. As information for the Contractor, the Architect's or Engineer's status is defined as follows:
 - 1.1 The Engineer will not make interpretations or decisions directly to the Contractor. All interpretations or decisions will be conveyed through the Construction Administrator.
 - 1.2 As the authorized representative of the Department of Public Works Commissioner, the Engineer is responsible for review of shop drawings, materials, and equipment intended for the work, in accordance with the "General Conditions", and the "Supplementary Conditions".
 - 1.3 Wherever the Architect or Engineer is mentioned in the documents in connection with an administrative function, it shall include the Construction Administrator in that function except for shop drawings.
- D. **Administrator:** [Construction](#) Administration shall be performed by the Representatives noted above.

1. The Construction Administrator is referred to in the Contract Documents as "Construction Administrator" or "Construction Manager" or by pronouns which imply it. All communications concerning the project will be directed through the Construction Administrator or a designated representative(s).
2. As information to the Contractor, the Construction Administrator's status is defined as follows:
 - 2.1 The Construction Administrator is the Owner's Agent who will, among other things, monitor the General Contractor's performance, scheduling and construction, process shop drawings, material, and equipment submittals, review and process periodic billings, review and recommend cost changes.
 - 2.2 The Construction Administrator will process all requests for information, interpretations and decisions regarding the meaning and intent of the Contract Documents, consulting with appropriate parties prior to rendering the interpretations or decisions to the Contractor. All such requests and replies shall be in writing.

01 14 00 WORK RESTRICTIONS

- 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 Contractor shall confine his operations, including storage of apparatus, equipment and materials to the contract limit lines as directed by the Construction Administrator.
- C. The areas and/or spaces, including their access, shall be maintained free and clear throughout the contract term.
- D. Parking for Contractor's employees will be limited to an area (or areas) designated by the Construction Administrator. The Contractor may be required to provide identification stickers for employees' cars.
- E. **STANDARDS OF CONDUCT**

SCSU has developed specific standards of conduct deemed necessary to ensure the orderly and efficient performance of duties and services at the University and to protect the health, safety, and welfare of all members of the University community. In accordance with those standards, the following are strictly prohibited:

 1. Use or possession of drugs or alcohol on campus;
 2. Possession of firearms or other weapons on campus;
 3. Smoking in University buildings;
 4. Harassment (sexual, racial or otherwise) or intimidation of any member of the University community;
 5. Violation of applicable traffic or public safety regulations, or of the University's rules and procedures;
 6. Unauthorized use of the University's vehicles, equipment or property;
 7. Use of University telephones for personal business;
 8. Removal or theft of University property;
 9. Unauthorized duplication or possession of University keys;
 10. Transfer of personal identification card or of parking pass to unauthorized personnel;
 11. Conduct or behavior that endangers the health, safety, and welfare of any member of the public or of the University community;
 12. Interference with the work of University employees;
 13. Improper attire;
 14. Loud, vulgar behavior or the use of profanity.

SCSU may, at its discretion, recommend discharge of any employee of the awarded contractor found to be in violation of these standards.

01 14 16 COORDINATION WITH OCCUPANTS

- 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. **Full Agency Occupancy During Construction:** The Agency will occupy the site and existing building during the entire construction period. Cooperate with the Agency during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with the Agency's operations.
1. Provide adequate building and fire code egress from the buildings during the renovation process. The Contractor will be responsible to maintain and protect egress ways during the construction sequence per the design as supplied by the Architect. Contractor shall be responsible for preparing egress plans for Owner approval and for Office of State Building Official and Office of State Fire Marshal for approval if required.
- C. **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 Project Manager, Agency Representative, Architect and General Contractor.
 2. A comprehensive list of items to be completed or corrected as issued by the General Contractor, together with the status of completion and terms of occupancy, will be forwarded to the Project Manager and the Architect by the Construction Administrator. A letter will be issued by the Project Manager and Architect 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 Construction Administrator 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 Project Manager will request a signed "Certificate of Compliance" from the Architect, and Contractor, and forward the Certificate to the State Building Inspector a Certificate of Occupancy and obtain the same after his review and approval.
 5. Upon occupancy, the Agency will assume responsibility for maintenance and custodial service for occupied portions of the building.
 6. **Work after Agency Occupancy:**
 - 6.1 For all work to complete the occupied building, warranty work, the balancing and commissioning of systems, repair of latent defects and adjustments after occupancy, the contractor is responsible for all costs associated with working in occupied buildings.

End
Section 01 10 00
Summary

01 20 00 PRICE AND PAYMENT PROCEDURES

A. **Summary:** Section 01 20 00 Price And Payment Procedures contains the following subsections:

- 01 21 00 Allowances (NOT USED)
- 01 22 00 Unit Prices – General (NOT USED)
- 01 23 00 Supplemental Bids
- 01 25 00 Substitution Procedures
- 01 26 00 Contract Modification Procedures
- 01 29 76 Progress Payment Procedures

01 21 00 ALLOWANCES

SECTION NOT USED

01 22 00 UNIT PRICES - GENERAL

SECTION NOT USED

01 23 00 SUPPLEMENTAL BIDS

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

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

C. **Procedures:**

1. **Coordination:** Modify or adjust affected adjacent Work as necessary to completely and fully integrate that Work into the Project.
 - 1.1 Include as part of each Supplemental Bid, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not mentioned as part of the Supplemental Bid.
 - 1.2 Execute accepted Supplemental Bids under the same conditions as other Work of this Contract.
 - 1.3 **Schedule:** A "Schedule of Supplemental Bids" is included at the end of this Section. Specification Sections referenced in the Schedule contain requirements for materials necessary to achieve the Work described under each Supplemental Bid.
 - 1.4 Acceptance or inclusion of the scope of any / all supplemental bids shall not extend the duration of the work as noted in the Bid Proposal forms.

D. Schedule of Supplemental Bids:

Supplemental Bids: Provide all labor, material, and equipment to complete the work noted below in accordance with the specifications and drawings:

Supplemental Bid No. 1: Roof replacement with a new 30-year roofing system in lieu of the base bid roofing system.

Supplemental Bid No. 2: Requires the cleaning of existing exterior face brick masonry as identified on the Drawings, and prescribed in Specification Section 04 01 10.02 Exterior Masonry Cleaning, and the application of Siloxane, penetrating water repellent per Specification Section 07 19 00 Water Repellents.

01 25 00 SUBSTITUTION PROCEDURES

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. Summary

1. This Section includes administrative and procedural requirements for handling requests for equals and substitutions made after award of the Contract.
2. Related Sections: The following Sections contain requirements that relate to this Section:
 - 2.1 Division 01 Section 01 33 00 "Submittal Procedures" specifies requirements for submitting the Contractor's Construction Schedule and the Submittal Schedule.
 - 2.2 Division 01 Section 01 42 19 "Reference Standards" specifies the applicability of industry standards to products specified.
 - 2.3 Division 01 Section 01 60 00 "Product Requirements" specifies requirements governing the Contractor's selection of products and product options.

C. Definitions

1. Definitions in this Article do not change or modify the meaning of other terms used in the Contract Documents.
2. **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.

D. Submittals

1. **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 "Substitution Request" Form at the end of this Section. See Article 15 in the General Conditions for further refinement and information.
 - 1.1 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 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.

2. Identify the product or the fabrication or installation method to be replaced in each request. Include related Specification Section and Drawing numbers.
3. Provide complete documentation showing compliance with the requirements for equals or substitutions, and the following information, as appropriate:
 - 3.1 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.
 - 3.2 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.
 - 3.3 Product Data, including Shop Drawings and descriptions of products and fabrication and installation procedures.
 - 3.4 Samples, where applicable or requested.
 - 3.5 A statement indicating the effect on the Contractor's Construction Schedule compared to the schedule without approval of the Equal or Substitution. Indicate the effect on overall Contract Time.
 - 3.6 Cost information, broken down, including a proposal of the net change, if any in the Contract Sum.
 - 3.7 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.
 - 2.8 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.
4. **Construction Administrator's Action:** If necessary, the Construction Administrator will request additional information or documentation for evaluation within **seven (7)** Calendar Days of receipt of the original request for equal or substitution request. The Construction Administrator who will notify the Owner of recommended acceptance or rejection of the proposed equal or substitution, within **fourteen (14)** Calendar Days of receipt of the request, or **seven (7)** Calendar 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)** Calendar Days after notification.
 - 1.1 Any request deemed an "Equal" and accepted by the Construction Administrator, 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".
 - 1.2 Any request deemed a "Substitution" and rejected or approved by Construction Administrator, 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.

D. Equal Or Substitutions

1. **Conditions:** The Construction Administrator 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 Construction Administrator will return the requests to the Construction Administrator without action except to record noncompliance with these requirements.
 - 1.1 The proposed request does not require extensive revisions to the Contract Documents.
 - 1.2 The proposed request is in accordance with the general intent of the Contract Documents.
 - 1.3 The proposed request is timely, fully documented, and/or properly submitted.
 - 1.4 The proposed request can be provided within the Contract Time. However, the Construction Administrator 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.

- 1.5** 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.
- 1.6** The proposed request can receive the necessary approvals, in a timely manner, required by governing authorities having jurisdiction.
- 1.7** The proposed request can be provided in a manner that is compatible with the Work as certified by the Contractor.
- 1.8** The proposed request can be coordinated with the Work as certified by the Contractor.
- 1.9** The proposed request can uphold the warranties required by the Contract Documents as certified by the Contractor.
- 2.** The Contractor's submission and the Construction Administrator'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.
- 3. **Equal or Substitution Product Request Form** (Example):**



7001
Equal or Substitute
Product Request

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

(If Pre-bid only) Current Bid Due
Date:

Request No.:

Dated :

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

DAS Project No.:

Project Name /
Location:

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

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

Contractually Specified Product:

Contractor Proposed Product:

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

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

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

Tests: ☐ Other:

Reason(s) for not providing the Specified Product:

Similar
Installation:

Project Name:

Architect's Name:

Project Location:

Owner's Name:

Date Installed:

Will proposed substitution impact other parts of the Work?	No <input type="checkbox"/>	Yes <input type="checkbox"/>	If Yes Attach An Explanation.	
Will proposed substitution increase Contract Time?	No <input type="checkbox"/>	Yes <input type="checkbox"/>	By Number Of Calendar Days <input style="width: 50px;" type="text"/>	
Actual Dollar Savings to the State of Connecticut if substitution is accepted:			\$	<input style="width: 100px;" type="text"/>
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:			<input style="width: 400px;" type="text"/>	
<i>(Firm's Typed Name)</i>				
By:	<input style="width: 150px;" type="text"/>	<input style="width: 100px;" type="text"/>	<input style="width: 150px;" type="text"/>	<input style="width: 100px;" type="text"/>
	<i>(Typed Name)</i>	<i>(Title)</i>	<i>(Signature)</i>	<i>(Date)</i>
Contractor / CMR Send copies to :		DAS PM: <input type="checkbox"/>	CA: <input type="checkbox"/>	

Consultant's Request Received on (Date): <input style="width: 100px;" type="text"/>	
Consultant's Review – This Substitution Request is:	
<input type="checkbox"/>	Approved: <i>(Submittal(s) in accordance with Div. 01 General Requirements, Section 01 33 00 Submittal Procedures.)</i>
<input type="checkbox"/>	Approved as Noted: <i>(Submittals in accordance with Div. 01 General Requirements, Section 01 33 00 Submittal Procedures.)</i>
<input type="checkbox"/>	Rejected: Use Specified Materials.
<input type="checkbox"/>	Rejected: Request Not Received Within Specified Time Period - Use Specified Materials.
Reviewed Issued By:	
Name:	<input style="width: 450px;" type="text"/>
	<i>(Typed Name)</i>
Title:	<input style="width: 450px;" type="text"/>
Signature:	<input style="width: 250px;" type="text"/>
	<i>(Signature)</i>
	<input style="width: 100px;" type="text"/>
	<i>(Date)</i>

CONSULTANT Send copies to:		DAS PM <input type="checkbox"/>	CA <input type="checkbox"/>	Chief Architect <input type="checkbox"/>	Chief Engineer <input type="checkbox"/>
If Approved: As noted by Consultant,					
DAS Chief Architect:		<input style="width: 250px;" type="text"/>	<input style="width: 100px;" type="text"/>		
		<i>(Signature)</i>	<i>(Date)</i>		

Copies:	Project File	Red R2
---------	--------------	--------

END

01 26 00 CONTRACT MODIFICATION PROCEDURES

- 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. Summary**
1. This Section specifies administrative and procedural requirements for handling and processing contract modifications.
- C. Related Sections:** The following Sections contain requirements that relate to this Section:
1. Division 01 Section 01 25 00 "Substitution Procedures" for administrative procedures for handling requests for substitutions made after award of the Contract.
 2. Division 01 Section 01 29 76 "Progress Payment Procedures" for administrative procedures governing Applications for Payment.
 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" for requirements for submittal of the Construction Progress Schedule.
 5. Division 00 General Conditions "Article 13" "Change Orders".
- D. Requests For Information**
1. 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 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.
 - 1.1 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.
 - 1.2 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.
 - 1.3 The Architect and Construction Administrator 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.
 - 1.4 A "Requests for Information Response" shall be issued within **seven (7)** Calendar Days of receipt of the request from the Contractor unless the Owner determines that a longer time is necessary to provide an adequate response.
 - 1.5 A "Request for Information Response" from the 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 **seven (7)** Calendar 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 **seven (7)** Calendar Days shall waive the Contractor's right to seek additional time or cost under the requirement these Requirements.

E. Minor Changes In The Work

1. 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.

F. Proposal Request

1. **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.
 - 1.1 "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.

G. Change Order Proposal:

1. 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 Worksheets" as required by the Owner.
2. **"Change Order Request" Forms:** Use "Change Order Proposal" and "Change Order Proposal Worksheets" forms as required by Owner.

H. Construction Change Directive:

1. **"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".
2. **Documentation:** The Contractor shall maintain detailed records on a time and material basis of work required by the "Construction Change Directive".
 - 2.1 After completion of the change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.
 - 2.2 The final value shall be negotiated based on the supporting data to determine the value of the work.
3. **Change Order Procedures:**
 - 3.1 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.

01 29 76 PROGRESS PAYMENT PROCEDURES

- 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. Summary:**
1. This Section specifies procedures for preparation and submittal of the Contractor's Applications for Payment.
 2. **Related Sections:** The following Sections contain requirements that relate to this Section.
 - 2.1 **Division 00 Notice to Bidders:** Article 10.
 - 2.2 **General Conditions:** Articles: 27 "Schedule of Values, Application for Payment"; 28 "Partial Payments"; 31 "Final Payment"; and 32 "Owner's Right to Withhold Payments".
 - 2.3 Division 01 Section 01 32 16 "Construction Progress Schedules" for requirements for construction scheduling and reporting progress of work.
 - 2.4 Division 01 Section 01 33 00 "Submittal Procedures".
 - 2.5 Division 01 Section 01 77 00 "Closeout Procedures" for requirements for Final Payment.
- C. Schedule Of Values:**
1. **Coordination:** Coordinate preparation of the "Schedule of Values" with preparation of the Construction Schedule. Use "Schedule of Values" form as required by the Owner.
 - 1.1 Submit the "Schedule of Values" to the Construction Administrator at the earliest possible date but no later than **twenty-one (21)** Calendar Days after Contract Start Date.
 2. **Format and Content:** Use the Project Manual Table of Contents as a guide to establish the format for each "Schedule of Values". Provide at least one line item for each Specification Section.
 - 2.1 Identification: Project identification on the Schedule of Values shall include, but not be limited to, the following:
 - 2.1.1 *Owner;*
 - 2.1.2 *Project Number;*
 - 2.1.3 *Project Name;*
 - 2.1.4 *Project Location;*
 - 2.1.5 *Contractor's name and address.*
 - 2.2 Arrange the "Schedule of Values" in tabular format as required by the Owner, containing separate columns including, but not limited to, the following Items:
 - 2.2.1 *Item Number;*
 - 2.2.2 *Description of Work with Related Specification Section or Division Number;*
 - 2.2.3 *Scheduled Values.*
 - 2.2.4 *Retainage;*
 - 2.2.5 *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.

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:** Each item in the Schedule of Values and the Applications for Payment shall be complete. Include the total cost and proportionate share of general overhead and profit margin for each item.

D. Applications For Payment:

1. Each of 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.
2. **Payment-Application Terms:** The Owner will process monthly progress payments. The Contractor may submit applications for payment on a monthly basis.
3. **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.
 - 3.1 For each item, provide a column including but not limited to the following items:
 - 3.2 Item Number.
 - 3.4 Description of Work and Related Specification Section or Division.
 - 3.5 Scheduled Value, break down by units of material and units of labor.
 - 3.6 Work Completed from previous application.
 - 3.7 Work Completed this period.
 - 3.7.1 Materials presently stored.
 - 3.7.2 Total Completed and stored to date of application.
 - 3.7.3 Percentage of Completion.
 - 3.7.4 Balance to Finish.
 - 3.7.5 Retainage.

E. 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 EACH "Schedule of Values".
2. Include amounts of Change Orders issued prior to the last day of the construction period covered by the application.

F. Transmittal: Except for final payment, submit to the Construction Administrator by a method ensuring receipt within **forty-eight (48)** hours. The contractor is encouraged to first submit a 'pencil' copy of each Application electronically for review and comment. **One (1)** complete, signed and notarized original of each Application for Payment, including lien waivers and similar attachments when required.

G. 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;
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. In accordance with CGS § Section 1. Section 42-158j:

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.

H. Application for Payment at Substantial Completion: Following issuance of the Certificate of Substantial Completion submit an Application for Payment form; use the form as required by the Owner.

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:
 - 2.1 *Occupancy permits and similar approvals;*
 - 2.2 *Warranties (guarantees) and maintenance agreements;*
 - 2.3
 - 2.4 *Maintenance instructions;*
 - 2.5
 - 2.6
 - 2.7 *Changeover information related to Owner's occupancy, use, operation, and maintenance;*
 - 2.8 *Final cleaning;*
 - 2.9 *Application for reduction of retainage and consent of surety;*
 - 2.10 *Advice on shifting insurance coverage;*
 - 2.11 *Final progress photographs;*
 - 2.12 *List of incomplete Work, recognized as exceptions to Architect's Certificate of Substantial Completion.*

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

1. *Completion of Project Closeout requirements.*

2. *Completion of list of items remaining to be completed as indicated on the attachment to the Certificate of Substantial Completion.*
3. *Ensure that unsettled claims will be settled.*
4. *Ensure that incomplete Work is not accepted and will be completed in accordance with a schedule prepared by the Contractor which is acceptable to the Owner.*
5. *Transmittal of required Project construction records to the Owner (including as-built documents specified in Section 01 77 00 "Closeout Procedures").*
6. *Proof that taxes, fees, and similar obligations were paid.*
7. *Removal of temporary facilities and services.*
8. *Removal of surplus materials, rubbish, and similar elements (Reference Section 01 74 19 "Construction Waste Management & Disposal").*
9. *The requirements of the General Conditions and Supplementary Conditions for Final Acceptance, Final Completion, Final Inspection, and Final Payment.*
10. *Asbestos, lead or other hazardous material manifests.*
11. *Completion of "Building Contractor Reporting Form" as supplied by Department of Public Works, for all Contractors, Subcontractors, Vendors, Suppliers, etc. who work on the Contract. The form includes the following information:*
 - 13.1 *Contractor/Subcontractor name.*
 - 13.2 *FEIN/Social Security Numbers*
 - 13.3 *Connecticut Tax Registration Numbers*
 - 13.4 *Type of work*
 - 13.5 *Name of business and address*
 - 13.6 *Remittance address.*

End

Section 01 20 00

Price And Payment Procedures

01 30 00 ADMINISTRATIVE REQUIREMENTS

A. **Summary:** Section 01 30 00 Administrative Requirements contains the following Subsections:

- 01 31 13 Project Coordination
- 01 31 19 Project Meetings
- 01 32 16 Construction Progress Schedules
- 01 33 00 Submittal Procedures
- 01 35 16 Alteration Project Procedures
- 01 35 53 Security Procedures

01 31 13 PROJECT COORDINATION

- 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. **Related Sections:** The following Sections contain requirements that relate to this section
1. **Section 01 29 76 "Progress Payment Procedures"** submission of Schedule of Values and Applications for payment.
- C. **Construction Administrator:**
1. The Construction Administrator is identified in Division 01 **Section 01 12 19 "Contract Interface"**.
 2. **Construction Mobilization:**
 - 2.1 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.
 - 2.2 During Construction, coordinate use of site and facilities through the Construction Administrator.
- D. **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:
- F. **General Coordination Provisions:**
1. **Inspection of Conditions:** Require the Installer of each major component to inspect both the substrate and conditions under which Work is to be performed and coordinate such inspections with the 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.
 2. The Construction Administrator will meet with the Contractor on all major items of coordination.
 3. See also **Division 00 General Conditions, Article 7 "Cooperation of Trades"**.

01 31 19 PROJECT MEETINGS

- 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. **Pre-construction Conference:**
1. 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. If possible, this meeting will take place within **seven (7)** Calendar Days after the written Notice to Proceed and before the Contract 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.

2. **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.
3. **Agenda:** Discuss items of significance that could affect progress, including the following:
 - 3.1 *Tentative construction schedule;*
 - 3.2 *Critical work sequencing;*
 - 3.3 *Progress meeting schedule;*
 - 3.4 *Designation of responsible personnel;*
 - 3.5 *Procedures for processing field decisions and Change Orders;*
 - 3.6 *Procedures for processing Applications for Payment;*
 - 3.7 *Distribution of Contract Documents;*
 - 3.8 *Submittal of Shop Drawings, Product Data, and Samples;*
 - 3.9 *Preparation of record documents;*
 - 3.10 *Use of the premises;*
 - 3.11 *Parking availability;*
 - 3.12 *Office, work, and storage areas;*
 - 3.13 *Equipment deliveries and priorities;*
 - 3.14 *Safety procedures;*
 - 3.15 *First aid;*
 - 3.16 *Security;*
 - 3.17 *Housekeeping;*
 - 3.18 *Working hours;*
 - 3.19 *Coordination with Audio-Visual and Telecommunications.*

C. Progress Meetings:

1. 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, or as appropriate to the progress of the work. 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.
2. **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.
3. **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.
4. **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.

5. A schedule of regular Project Meetings will be established at the Pre-construction Conference.

01 32 16 CONSTRUCTION PROGRESS SCHEDULES

- 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. **Summary:**
1. This Section includes administrative and procedural requirements for the preparation, submittal, and maintenance of the Contractor's computerized progress schedule, reporting progress of the Work, and Contract time adjustments.
- C. **Related Documents:** The following Sections contain requirements that relate to this section
1. Refer to the General Conditions and the Agreement for definitions and specific dates of Contract Time.
- D. **Related Sections:** The following Sections contain requirements that relate to this section
1. **Section 01 29 76 "Progress Payment Procedures"** submission of Schedule of Values and Applications for payment.
2. **Section 01 31 19 "Project Meetings"** specifies the requirements for submitting and distributing meeting and conference minutes.
3. **Section 01 33 00 "Submittal Procedures"** specifies requirements for submitting the preliminary Construction Schedule and the monthly Schedules
4. **Section 01 45 00 "Quality Control"** specifies requirements for submitting inspection and test reports.
5. **Section 01 60 00 "Product Requirements"** specifies requirements for submitting the list of products

E. *Construction Schedule Format:*

- 1 The facility will be considered occupied by the university for the life of the project. Specifically, the dates/times noted below shall be included in the Contractor's submitted schedule and will be reflected as no-work/ quiet site durations. For partial days – 1 hour before and after the event schedule shall be included in the no-work/quiet site period.

SCHEDULE FOR LYMAN CENTER FOR SUMMER 2023

May 22, 5p: GWCC Nurse Pinning
May 25-26, 8a-5p: True Colors Conference
June 2, 6p: NHSO
Jun 5-6, 5p: NH Adult Ed
June 10-11, A&I: All day
June 12, 8a-12p: SCSU NSO
June 14, 8a-5p: Eli Whitney Rehearsal & Grad
June 15, 8a-12p: SCSU NSO
June 17-18, All day: A&I
June 20, 5p: Tia Russell Dance
June 21, 8a-12p: SCSU NSO
June 21, 5p: Tia Russell Dance
June 22, 5p: A&I
June 23, 5p: Tia Russell Dance
June 24, 5p: Tia Russell Dance
June 25, 8a-12p: SCSU NSO
June 28, 8a-12p: SCSU NSO
July 3- Aug 17 Elm Shakespeare (8a-10p) Not on Mainstage. - Drama Lab, Green Room, Loading dock area, and scene shop.
July 25, 8a-1p: SCSU NSO
July 28-30: United Methodist Regional Church Retreat

1. **Format:** Provide a detailed, time-scaled computer-generated Project Schedule with activities representing each portion of the Work for the entire Contract Performance Period. If necessary, the Project Schedule should show the Critical Path for the planning, scheduling and reporting of the work to be performed under the contract.
2. **Maximum Activity Durations:** The Contractor shall prepare schedule utilizing activity durations in terms of days.
3. **Activity Predecessors and Successors:** Every activity shall have logically assigned predecessors and successors.
4. **Calendars:** The planning unit for the Work shall be days. The Contractor shall coordinate weekends (Saturdays and Sundays) and State holidays to be observed with the Owner and incorporate them into the schedule as non-working days. The schedule shall be based on a **seven (7)** day week, Sunday through Saturday.
5. **Weather Days Allowance:** On projects with significant exterior work the Contractor shall include as a separate identifiable activity on the Critical Path, an activity labeled "Weather Days Allowance" inserted at the end of the schedule.
 - 5.1 The duration of the Weather Days Allowance shall be **seven (7)** days per year and shall be prorated for partial years.

F. Content

1. Show complete sequence of construction by activity with dates showing the beginning and completion of each element of construction.
2. Identify work of separate phases and other logically grouped activities.
3. On larger projects, Provide separate schedule of submittal dates for shop drawings, product data, and samples. Indicate decision dates for selection of finishes.
4. Indicate critical path with original baseline indicated.
5. Coordinate content with Schedule of Values specified in Section 01 29 76 "Progress Payment Procedures."

G. Schedule Revisions:

1. Either the owner or the Contractor may request a Schedule Revision. Schedule Revisions shall not be made without the written consent of the Owner. Updating the Project Schedule to reflect actual progress shall not be considered revisions to the Project Schedule.
2. A Schedule Revision is considered necessary under the following conditions:
3. Only upon acceptance of a revision to the Schedule by the Construction Administrator shall the revision be reflected in the next Schedule Update.
4. The Construction Administrator reserves the right to accept or reject any schedule revisions proposed by the General Contractor.

I. Contract Time Extensions:

1. Time Extensions will be granted only to the extent that equitable adjustments for the activity or activities affected exceed or exceeded the total or remaining float along the Critical path or activities at the time of the actual delay. Actual delays in activities which do not affect the Critical Path work or which do not move the General Contractor's planned completion date beyond the Contract completion date or current completion date as affected by previous delays, will not be the basis for an adjustment to the Contract time. Time Extensions shall not be granted until a delay occurs that:
 - 1.1 Is beyond control of and without fault of or negligence of the General Contractor and the major Trade Contractors or Suppliers at any time.
 - 1.2 Extends the actual performance of the work beyond the Contract completion date or other specified Interim Milestones.
2. Should a non-compensable excusable delay be concurrent with one or more compensable delays, the General Contractor and Owner agree that the net result is a non-compensable, excusable delay to the extent the delay is caused by the non-compensable event.

J. Review And Acceptance Of Project Schedule Submittals:

1. The Construction Administrator shall review schedule submittals for conformance with the requirements of the Contract Documents.
2. It is the General Contractor's responsibility to ensure that all Project Schedules are in compliance with all of the requirements of the Contract Documents. Non-conforming submittals shall be returned by the Construction Administrator without further review for correction and re-submittal.
2. The General Contractor shall be responsible for all delays due to its failure to submit complete submittals in accordance with the requirements of the Contract Documents.
3. The Schedule submitted will not be considered acceptable until all of the Construction Administrator's comments are incorporated into the schedule to the Construction Administrator's satisfaction.
4. Errors in any Project Schedule accepted by the Construction Administrator, including but not limited to activity durations, relationships between activities, resource allocation or other float suppression techniques that do not accurately reflect the work may be identified at any time and once identified shall be corrected by the General Contractor.

K. Payment:

1. Failure of the General Contractor to submit a Baseline Schedule or Revised Baseline Schedule for any portion of the work in accordance with this specification may result in the withholding all Contract payment until the schedule is submitted to, and accepted for compliance with the specification and reasonableness, by the Construction Administrator.

L. Performance Monitoring:

1. The Owner may elect throughout, or at any time during, the Project to record the number of workers and construction equipment working on each construction schedule activity in each area of the Project. The Owner's request for this information will be without additional cost to the State. This information will be used by the Owner to evaluate the adequacy of the Contractor's performance and project manpower staffing, as well as any Contractor claims.

M. Distribution:

1. Distribute copies of the computer generated schedules to Construction Administrator, Architect, Owner, and other concerned parties.
2. Instruct recipients to promptly report, in writing, problem anticipated by projections indicated in schedules.

01 33 00 SUBMITTAL PROCEDURES

- 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. Summary

1. This Section includes administrative and procedural requirements for submittals required for performance of the Work, including but not limited to the following:

- 1.1 Submittal schedule.*
- 1.2 Shop Drawings.*
- 1.3 Product Data.*
- 1.4 Samples.*
- 1.5 Quality assurance submittals.*
- 1.6 Proposed "Substitutions/Equals".*
- 1.7 Warrantee samples.*
- 1.8 Coordination Drawings.*
- 1.9 O & M Manuals*

- C. 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 #'s and Connecticut tax registration #.*

D. 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 "Project Coordination" 01 31 13 for Project Coordination documents.
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 45 00 "Quality Control" specifies requirements for submittal of inspection and test reports and mockups.
7. Division 01 Section 01 77 00 "Closeout Procedures" specifies requirements for submittal of Project Record Documents and warranties at project closeout.
8. Division 01 Section 01 78 30 "Warranties and Bonds".

E. Definitions

1. Coordination Drawings show the relationship and integration of different construction elements that require careful coordination during fabrication or installation to fit in the space provided or to function as intended and as identified in the Specification Divisions 02 through 49.
2. 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.
3. Mockups are full-size assemblies for review of construction, coordination, testing, or operation; they are not Samples.

F. Submittal Procedures

1. **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.
 - 1.1 Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 - 1.2 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.
 - 1.2.1 The Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until all related submittals are received.
 - 1.2.2 The Architect reserves the right to reject incomplete submitted packages.
 - 1.3 **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.
 - 1.3.1 Allow **fourteen (14)** calendar days for initial review. Allow additional time if the Architect must delay processing to permit coordination with subsequent submittals.
 - 1.3.2 If an intermediate submittal is necessary, process the same as the initial submittal.
 - 1.4 Allow **fourteen (14)** calendar days for review of each resubmittal.
 - 1.5 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.

2. **Submittal Preparation:** Place a permanent label, title block or *8-1/2 inches x 11 inches* 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.
 - 2.1 **The submittal shall be submitted electronically or as determined otherwise at the pre-construction conference or by the Construction Administrator.**
 - 2.2 Provide a space approximately *4 inches by 5 inches* 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.
 - 2.3 Include the following information on the label for processing and recording action taken.
 - 2.3.1 *Project Name and State of Connecticut Project Number.*
 - 2.3.2 *Date.*
 - 2.3.3 *Name and address of the Architect, Construction Administrator, and Owner Representative.*
 - 2.3.4 *Name and address of the Contractor.*
 - 2.3.5 *Name and address of the subcontractor, if appropriate.*
 - 2.3.6 *Name and address of the supplier.*
 - 2.3.7 *Name of the manufacturer.*
 - 2.3.8 *Number and title of appropriate Specification Section.*
 - 2.3.9 *Drawing number and detail references, as appropriate.*
 - 3.10 *Indicate either initial or resubmittal.*
 - 3.11 *Indicate deviations from Contract Documents.*
 - 3.12 *Indicate if "equal" or "substitution".*
3. **Submittal Transmittal:** Submit each submittal electronically. Include a transmittal form with each submittal from the Contractor to the Architect. 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. The Architect will not accept submittals received from sources other than the Contractor.
 - 3.1 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.
4. **Distribution:** Following each response to a submittal, distribute copies, electronically, to the Construction Administrator, Architect, Owner, subcontractors, and other parties required to comply.
 - 4.1 When revisions are made, distribute to the same parties.

G. Daily Construction Reports

1. Prepare a daily construction report recording the following information concerning events at the site, and submit duplicate copies to the Construction Administrator at weekly intervals:
 - 1.1 *List of subcontractors at the site.*
 - 1.2 *Approximate count of personnel at the site.*
 - 1.3 *High and low temperatures, general weather conditions.*
 - 1.4 *Accidents and unusual events.*
 - 1.5 *Meetings and significant decisions.*
 - 1.6 *Stoppages, delays, shortages, and losses.*
 - 1.7 *Meter readings and similar recordings.*
 - 1.8 *List of equipment on site and identify if idle or in use.*

- 1.9 Orders and requests of governing authorities.*
- 1.10 Change Orders received, start and end dates.*
- 1.11 Services connected, disconnected.*
- 1.12 Equipment or system tests and startups.*
- 1.13 Partial Completion's, occupancies.*
- 1.14 Substantial Completion's authorized.*
- 1.15 Equals or Substitutions approved or rejected.*

H. Shop Drawings

1. 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.
2. Shop Drawings include fabrication and installation Drawings, setting diagrams, schedules, patterns, templates and similar Drawings. Include the following information:
 - 2.1 Dimensions.
 - 2.2 Identification of products and materials included by sheet and detail number.
 - 2.3 Compliance with specified standards.
 - 2.4 Notation of coordination requirements.
 - 2.5 Notation of dimensions established by field measurement.
 - 2.6 Sheet Size: Except for templates, patterns and similar full-size Drawings, submit Shop Drawings on sheets at least **8-1/2 by 11 inches** but no larger than **36 by 48 inches**.
 - 2.6.1 Submit electronically as directed by the Construction Administrator. The Contractor's submittal shall identify the specification section and/or drawing number applicable to the submittal.
 - 2.6.2 Details shall be large scale and/or full size.
3. The Contractor shall review the Shop Drawings, stamp with this approval, and submit them **electronically** 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 Construction Administrator, in writing of any deviation in the shop drawings from the requirements of the Contract Documents.
4. The Construction Administrator 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.
5. The Contractor shall make any corrections required by the Architect and shall resubmit electronically the corrected copies of Shop Drawings until fully reviewed.
6. The Construction Administrator's review and comments on Shop Drawings shall not relieve the Contractor of responsibility for any deviation from the requirements of the Contract Documents.
7. Only final reviewed Shop Drawings are to be used on the Project site.
8. 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 Construction Administrator 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 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".

J. Product Data

1. Collect Product Data into a single electronic 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.
 - 1.1 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:
 - 1.1.1 *Manufacturer's printed recommendations.*
 - 1.1.2 *Compliance with trade association standards.*
 - 1.1.3 *Compliance with recognized testing agency standards.*
 - 1.1.4 *Application of testing agency labels and seals.*
 - 1.1.5 *Notation of dimensions verified by field measurement.*
 - 1.1.6 *Notation of coordination requirements.*
 - 1.2 Do not submit Product Data until compliance with requirements of the Contract Documents has been confirmed.
 - 1.3 **Preliminary Submittal:** Submit a preliminary single copy of Product Data where selection of options is required.
 - 1.4 **Submittals:** Submit an electronic copy and transmittal of each required submittal; submit **two (2)** 'hard' copies where required for maintenance manuals. The Construction Administrator will electronically return the submittal marked with action taken and corrections or modifications required.
 - 1.4.1 Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.
 - 1.5 **Distribution:** Furnish electronic copies of final submittal to installers, subcontractors, suppliers, manufacturers, fabricators, and others required for performance of construction activities. Show distribution on transmittal forms.

K. Samples

1. 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.
 - 1.1 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:
 - 1.1.1 *Specification Section number and reference.*
 - 1.1.2 *Generic description of the Sample.*
 - 1.1.3 *Sample source.*
 - 1.1.4 *Product name or name of the manufacturer.*
 - 1.1.5 *Compliance with recognized standards.*
 - 1.1.6 *Availability and delivery time.*
 - 1.2 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.

- 1.2.1 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.
 - 1.3 **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.
 - 1.5 Maintain sets of Samples, as returned, at the Project Site, for quality comparisons throughout the course of construction.
 - 1.5.1 Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.
 - 2. **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.
- L. **Quality Assurance Submittals**
 - 1. 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.
 - 2. **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.
 - 2.1 **Signature:** Certification shall be signed by an officer of the manufacturer or other individual authorized to sign documents on behalf of the company.
 - 3. **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."
- M. **Construction Administrator's Action:**
 - 1. Except for submittals for the record or information, where action and return is required, the Construction Administrator will review each submittal, mark to indicate action taken, and return promptly.
 - 1.1 Compliance with specified characteristics is the Contractor's responsibility.
 - 2. **Action Stamp:** The Construction Administrator will stamp each submittal with a uniform, action stamp. The Construction Administrator will mark the stamp appropriately to indicate the action taken.
 - 3. **Unsolicited Submittals:** The Construction Administrator will discard unsolicited submittals without action.

01 35 16	ALTERATION PROJECT PROCEDURES
-----------------	--------------------------------------

- 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. **Summary**
 - 1. This Section includes administrative and procedural requirements for performing alteration and renovation Work.
 - 2. **Related Sections:** The following Sections contain requirements that relate to this Section:
 - 2.1 Division 01 Section 01 31 13 "Project Coordination" for procedures for coordinating cutting and patching with other construction activities.
 - 2.2 Division 01 Section 01 73 29 "Cutting and Patching" for procedures for cutting and patching.
 - 2.3 Refer to other Sections for specific requirements and limitations applicable to performing alteration Work with individual parts of the Work.

- 2.5 Requirements of this Section apply to mechanical and electrical installations. Refer to Division 21, 22, 23 and 26 Sections for other requirements and limitations applicable to renovation Work by mechanical and electrical installations.

C. Products For Patching And Extending Work:

1. **New Materials:** As specified in product sections; match existing Products and Work .for patching and extending Work.
2. **Type and Quality of Existing Products:** Determine by inspecting and testing Products where necessary, referring to existing Work as a standard.

D. Inspection

1. **General:**

- 1.1 Verify that demolition is complete and areas are ready for installation of new Work.
- 1.2 Beginning of restoration Work means acceptance of existing conditions.

2. **Project Procedures for Work Involving Lead Containing Material (LBP):**

- 2.1 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.
- 2.2 The Contractor's Work shall be based on a child under the age of six (6) in residence; the Work shall also be in accordance with Connecticut Regulations Section 19a-111-1 through 11.
- 2.2 This roof was replaced in 1994. It is not expected that any painted surfaces containing lead-based paint will be encountered.
- 2.3 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 and shall advise the University if he/she feels that there are situations where they suspect lead based paint.

3. Project Procedures for Work Involving Asbestos Containing Material (ACM):

- 3.1** The Owner is responsible for abating all ACM that is visible and accessible. In demolition projects, every attempt will be made by the owner to remove all ACM that is discovered.
- 3.2** If the Contractor should encounter any material suspect or known to contain ACM, he should immediately notify the Construction Administrator of same. It is the State's responsibility to have the material tested and abated (if necessary). The Owner will respond within **twenty-four (24)** hours after receiving the Contractor's written request to the Construction Administrator for testing the suspect material. The Owner will abate ACM (if necessary) within a reasonable time period, i.e. within **seven (7)** Calendar Days.
- 3.3** This roof was replaced in 1994. It is not expected that any asbestos will be encountered. Under no circumstances 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.
- 3.4** See also **Division 00 General Conditions, Article 23 "Cutting, Fitting, Patching and Digging"**.

E. Preparation:

- 1.** Cut, move, or remove items as are necessary for access to alterations and renovation Work. Replace and restore at completion.
- 2.** 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.
- 3.** Remove debris and abandoned items from area and from concealed spaces.
- 4.** Prepare surface and remove surface finishes to provide for proper installation of new Work and finishes.

F. Installation:

- 1.** Coordinate Work of alterations and renovations to expedite completion and if required sequence Work to accommodate Owner occupancy.
- 2.** 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"**.
- 3.** Recover and refinish Work that exposes mechanical and electrical Work exposed accidentally during the Work.
- 4.** Install Products as specified in individual sections.

G. Transitions:

- 1.** 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.

H. Repair of Damaged Surfaces:

- 1.** Patch or replace portions of existing surfaces that are damaged, lifted, discolored, or showing imperfections.
- 2.** Repair substrate prior to patching finish.

I. Finishes:

- 1.** Finish surfaces as specified in individual Product sections.
- 2.** Finish patches to produce uniform finish and texture over entire area. When finish cannot be matched, refinish entire surface to nearest intersections.

J. Cleaning:

1. In addition cleaning specified in **Section 01 77 00 "Closeout Procedures"**, clean Agency occupied areas of Work.

01 35 53 SECURITY PROCEDURES

- 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.** Provide a security program and facilities to protect work, existing facilities, and Owner's operations from unauthorized entry, vandalism, and theft. Coordinate with Owner's security program.
- C.** The General Contractor shall be solely responsible for damage, loss, or liability due to theft or vandalism.
- D. Identification Badges for General Contractor's Personnel and Visitors:**
 1. The General Contractor shall coordinate on-site identification of his employees with the SCSU Facilities Planning and Operations Office, 615 Fitch Street, (203) 392-6051, to make arrangements prior to commencing work.
 2. Badges are to be worn on outer garment where visible at all times while at the construction site. Any personnel of the General Contractor, or his/her subcontractors, or their representatives, found without badges, will be asked to leave the university.

End
Section 01 30 00
Administrative Requirements

01 40 00 QUALITY REQUIREMENTS

A. **Summary:** Section 01 40 00 Quality Requirements contains the following Subsections:

01 42 16	Definitions
01 42 19	Referenced Standards
01 45 00	Quality Control

01 42 16 DEFINITIONS

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. **Definitions**

1. **General:** Basic contract definitions are included in the General Conditions of the Contract for Construction.
2. **"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.
3. **"Directed":** Terms such as "directed," "requested," "authorized," "selected," "approved," "required," and "permitted" mean directed by the Architect, requested by the Architect, and similar phrases.
4. **"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.
5. **"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.
6. **"Furnish":** The term "furnish" means supply and deliver to the Project Site, ready for unloading, unpacking, assembly, installation, and similar operations.
7. **"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.
8. **"Provide":** The term "provide" means to furnish and install, complete and ready for the intended use.
9. **"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.
 - 9.1 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.
 - 9.2 **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.
 - 9.3 **Assigning Specialists:** Certain Sections of the Specifications require that specific construction activities shall be performed by specialists who are recognized experts in those operations. The specialists must be engaged for

those activities, and their assignments are requirements over which the Contractor has no option. However, the ultimate responsibility for fulfilling contract requirements remains with the Contractor.

9.3.1 This requirement shall not be interpreted to conflict with enforcing building codes and similar regulations governing the Work. It is also not intended to interfere with local trade-union jurisdictional settlements and similar conventions.

3. **"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.
4. **"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.

01 42 19 REFERENCE STANDARDS

- 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. **Industry Standards:**
 1. **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.
 2. **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.
 3. **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.
 4. **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.
 5. **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.
- A. Where copies of standards are needed to perform a required construction activity, the Contractor shall obtain copies directly from the publication source.
 1. **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.

01 45 00 QUALITY CONTROL

- 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. Summary

2. This Section includes administrative and procedural requirements for quality-control services.
3. Inspection and testing services may be required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with Contract Document requirements.
4. Requirements of this Section relate to customized fabrication and installation procedures, not production of standard products.
 - 4.1 Specified inspections, tests, and related actions do not limit Contractor's quality-control procedures that facilitate compliance with Contract Document requirements.
 - 4.2 Requirements for Contractor to provide quality-control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

C. 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.

B. Responsibilities

1. **Contractor Responsibilities:** Unless otherwise indicated as the responsibility of another identified entity, the Contractor 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 included in the Contract Sum.
 - 1.1 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. **Retesting:** The Contractor is responsible for retesting where results of inspections, tests, or other quality-control services prove unsatisfactory and indicate noncompliance with Contract Document requirements, regardless of whether the original test was Contractor's responsibility.
 - 2.1 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.
3. **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.
 - 4.1 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.
 - 4.2 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.
 - 1.3 The testing agency shall not perform any duties of the Contractor.

5. Contractor will pay for the services of an independent testing agency laboratory to perform inspections, tests and other services required by the Specifications.
6. Submit reports of tests that are part of the submittal requirements which indicate compliance or non-compliance with the specified standard.
7. See also General Conditions Article 16 "Inspections & Tests".

E. Submittals

1. The independent testing agency shall submit a certified written report, in duplicate, of each inspection, test, or similar service to the Construction Administrator.

F. Quality Assurance

1. **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.

G. Repair And Protection

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."**

1. Protect constructions exposed by or for quality-control service activities, and protect repaired construction.
2. Repair and protection is Contractor's responsibility, regardless of the assignment of responsibility for inspection, testing, or similar services.

End
Section 01 40 00
Quality Requirements

01 50 00 TEMPORARY FACILITIES AND CONTROLS

- A. **Summary:** Section 01 50 00 Temporary Facilities And Controls contains the following subsections:

01 51 13	Temporary Electricity And Lighting
01 51 16	Temporary Fire Protection
01 51 33	Temporary Telecommunications
01 51 36	Temporary Water
01 52 13	Field Offices And Sheds
01 52 19	Temporary Sanitary Facilities
01 54 00	Construction Aids
01 55 16	Haul Routes
01 56 00	Temporary Barriers And Enclosures
01 56 43	Temporary Protection
01 57 19	Temporary Environmental Controls

01 51 13 TEMPORARY ELECTRICITY AND LIGHTING

- 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. Connect to existing service, provide branch wiring and distribution boxes located to provide power and lighting by construction-grade extension cords. Owner will pay cost of energy used. Take measures to conserve energy. Provide lighting for construction operations. At the termination of construction, return the facilities to their original condition.

01 51 16 TEMPORARY FIRE PROTECTION

- 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 Contractor, during construction, shall be responsible for loss or damage by fire to the work of the project until Acceptance of the Work. Any fire used within the structure for working purposes shall be extinguished when not in use. Bitumen or tar shall be melted on the ground only. No flammable material shall be stored in the structure in excess of amounts allowed by the authorities. No gasoline shall be stored in or close to the building at any time. The Contractor shall assign a responsible employee to be in charge of fire protection measures.
- C. All Hot Work Permits should be obtained at the Facilities Operations Building, 615 Fitch Street, Hamden, CT 06515.

01 51 33 TEMPORARY TELECOMMUNICATIONS

- 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. **It is required that the contractor's field supervisor carry a cellular phone at all times.**

01 51 36 TEMPORARY WATER

- 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. **Existing Water Service:** Water for construction purposes may be taken from the existing service. The Contractor shall provide connections, approved backflow prevention device, and pipe to the water main or nearest hydrant, subject to the approval of the University Representative. Upon completion of work, the Contractor shall remove the temporary connections. If new water service is installed before construction is complete, the new system may be used provided it is returned to the Owner in as-new condition. The University shall pay for the water used. The Contractor shall not waste water or use faulty equipment. Contractor to exercise care in the transport of water or any liquids, and shall clean up all spills immediately.

01 52 13 FIELD OFFICES AND SHEDS

- 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. **Field Office:**
1. **General:** The University will not be providing a separate room for the contractor to use as a field office.
 - 1.1 The Contractor shall provide and install a 5-lb. ABC fire extinguisher, and an approved first aid kit for the workspaces.
 - 1.2 Contractor to provide a cell phone to their Project Superintendent for immediate phone access by SCSU 24 hours a day, unless a different time span is agreed to.
- C. **Storage Sheds:**
1. Storage sheds for tools, materials and equipment shall be weathertight with heat, lighting and ventilation for products requiring controlled conditions.
 2. Remove temporary materials, equipment services and construction before Substantial Completion.
 3. Clean and repair damage caused by installation or use of temporary facilities. Restore existing facilities used during construction to be specified or to original condition.

01 52 19 TEMPORARY SANITARY FACILITIES

- 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. **General Contractor's Construction Work:** Provide toilet facilities for General Contractor's and subcontractor's employees engaged on the Project, including employees of other contractors in accordance with the OSHA Table D-1 (29CFR CH.XVII, OSHA Standard 1926.51)_below. Locate toilets where directed and maintain them in a sanitary condition.

Number Of Employees	Minimum Number Of Facilities*
20 or less	1 toilet
20 or more	1 toilet and 1 urinal per 40 employees
200 or more	1 toilet and 1 urinal per 50 employees
*Toilet/Urinal Combinations shall count as only one facility.	

- C. The General Contractor shall provide, where directed, chemical toilets with toilet tissue, plus wash basins with water, soap and paper towels. The General Contractor shall maintain the facilities in a sanitary condition.

01 54 00 CONSTRUCTION AIDS

- 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 General 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 Documents except where this is otherwise specified in any Technical Specification Section. All such items shall meet the approval of the University, but responsibility for design, strength, and safety shall remain with the General 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 A.G.C. (Associated General Contractors of America) and the standards of the Connecticut Department of Labor (DOL).
- C. Staging/laydown areas, exterior, and interior, required for the execution of the Contract Documents, shall be furnished, erected, relocated if necessary, and removed by the general Contractor. Staging/laydown shall be maintained in a safe condition without charge to the Owner and for the use of all trades as needed.

01 55 16 HAUL ROUTES

- 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 General 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, and construction operations or in any other manner.
- C. 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 General Contractor shall be repaired by him at his own expense.
- D. If the work of the Contract affects public use of any street, road, highway, or thoroughfare, the General 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 General Contractor will be responsible for payment of any needed police services.

01 56 00 TEMPORARY BARRIERS AND ENCLOSURES

- 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. Provide barriers to prevent public entry into construction areas and to protect existing facilities from damage by construction operations.
- C. Before excavation begins, install an enclosure fence with lockable entrance gates. Locate where indicated on the Construction Documents or enclose the entire construction 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.
- D. Provide covered walkways as required by governing authorities for public rights-of-way and for public access to existing buildings.
- E. Provide barriers around all trees and plants designated to remain. Protect against vehicular traffic, materials' dumping, chemically injurious materials, puddles, or running water.
- F. 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.

- G. 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 Department's approval of an alternate egress plan.
- H. See also **Division 00 General Condition, Article 19 "Protection of the Work, Persons, and Property.**

01 56 43 TEMPORARY PROTECTION

- 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. Protect buildings, equipment, furnishings, grounds, and plantings from damage. Any damage shall be repaired or otherwise made good at no expense to the State.
- C. Provide protective coverings and barricades to prevent damage. The General 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.
- D. Provide temporary protection for installed products. Control traffic in immediate area to minimize damage.
- E. 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.
- F. See also **Division 00 General Condition, Article 19 "Protection of the Work, Persons, and Property.**

01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS

- 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. **Temporary Environmental Controls:** General Contractor is to provide the following controls.
 - 1. **Rodent and Pest Control:** if necessary, retain a local exterminator or pest control company to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests. Employ this service to perform extermination and control procedures at regular intervals so the Project will be free of pests and their residues at materials.
 - 2. Dust Control (construction and demolition);
 - 3. Noise Control;
 - 4. Erosion and Sediment Control;
 - 5. Pollution Control;
 - 6. Traffic Control.

End
Section 01 50 00
Temporary Facilities And Controls

01 60 00 PRODUCT REQUIREMENTS

- A. **Summary:** Section 01 60 00 Product Requirements contains the following subsections:

01 60 00 Product Requirements

01 60 00 PRODUCT REQUIREMENTS

- 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. **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.
1. Promptly inspect shipments to assure that products comply with requirements, that quantities are correct and products are undamaged.
 2. Packages, materials and equipment showing evidence of damage will be rejected and replaced at no additional cost to the Owner.
- C. **Storage and Protection:**
1. Store products in accordance with manufacturers' instructions with seals and labels intact and legible. Store sensitive products in weathertight enclosures; maintain within temperature and humidity range required by manufacturer.
 2. 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.
 3. Store loose granular material on solid surfaces in a well-drained area; prevent mixing with foreign matter.
 4. 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.
 5. Stone, masonry units and similar materials shall be stored on platforms or dry skids and shall be adequately covered and protected against damage.
 6. The Contractor shall prepare, as directed by the Owner, one area or space in the building for storage of State-owned equipment.

**End
Section
01 60 00 Product Requirements**

01 70 00 EXECUTION AND CLOSEOUT REQUIREMENTS

- A. **Summary:** Section 01 70 00 Execution and Closeout Procedures contains the following subsections:
- | | |
|----------|----------------------|
| 01 73 29 | Cutting and Patching |
| 01 74 13 | Progress Cleaning |
| 01 77 00 | Closeout Procedures |
| 01 78 30 | Warranties and Bonds |

01 73 29 CUTTING AND PATCHING

- 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. It is the responsibility of the Contractor to provide chases, channels or openings where needed.
- C. The Contractor shall install sleeves, inserts, and hangers furnished by the trades needing same.
- D. 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.
- E. Written permission shall be obtained from the Contractor before cutting beams, arches, lintels or other structural members.
- F. 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.
- G. Do cutting and patching to integrate all elements of the work. Provide penetrations of existing surfaces. Provide samples for testing. Seal penetrations through floors, walls, ceilings, and roofs, as applicable; restore or preserve fire-rated and smoke-barrier construction. Construction and finishes shall match original work.
- H. 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.
- I. 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.
- J. Also see Division 00 General Conditions **Article 23 "Cutting, Fitting, Patching, and Digging"**,

01 74 13 PROGRESS CLEANING

- 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. **This Section includes:**
1. Cleaning requirements during construction operations.
 2. Final cleaning prior to turning the project over to the Owner.
- C. **Quality Assurance**
1. Coordinate with **Section 01 57 19 - Temporary Environmental Controls.**
 2. Coordinate with **Section 01 77 00- Close out Procedures.**
 - 2.1 Contractor shall provide progress cleaning that minimizes sources of food, water, and harborage available to pests.
- D. Utilize non-toxic cleaning materials and methods.
1. Use natural cleaning materials where feasible.
- E. Maintain areas under the General Contractor's control free of waste materials, debris, and rubbish. Maintain in a clean and orderly condition.
- F. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces before closing the space.

- G. Periodically clean interior areas before start of surface finishing and continue cleaning on an as-needed basis.
- H. The General Contractor shall control cleaning operations so that dust and other particulates will not adhere to wet or newly-coated surfaces.
- I. Remove waste materials, debris, and rubbish from site daily and dispose of legally off-site. No scrap/debris shall remain inside the building or anywhere on site upon final acceptance of the project.
- J. **Final Cleaning:**
 - 1. At completion of Work, remove all remaining waste materials, rubbish, tools, equipment, machinery and surplus materials, and clean all exposed surfaces; leave Project clean and ready for occupancy.
 - 1.1 After review of trees to remain by Architect and Owner, remove tree tags.
 - 1.2 Provide final cleaning in accordance with ASTM E1971 and the approved Integrated Pest management (IPM) plan.
- K. See also **Division 00 General Conditions, Article 24 "Cleaning Up"**.

01 77 00 CLOSEOUT PROCEDURES

- 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. **Substantial Completion:**
 - 1. Upon completion of the work, the General Contractor shall submit to the State a Certificate of Substantial Completion wherein the General Contractor certifies that all conditions of the Contract Documents have been met, and that the facility is ready for occupancy by the Agency. Issuance of a Certificate of Substantial Completion by the Owner shall be a pre-condition for payment by the Owner.
 - 1.1 *Preliminary Procedures: Before requesting inspection for Certification of Substantial Completion, complete the following. List exceptions in the request.*
 - 1.2 *In the Application for Payment that coincides with, or first follows, the date Substantial Completion is claimed, show 100 percent (100%) completion for the portion of the Work claimed as substantially complete.*
 - 1.2.1 *Include supporting documentation for completion as indicated in the Contract Documents and a statement showing all accounting of the Contract Documents.*
 - 1.2.3 *If 100 percent (100%) completion cannot be shown, include a list of incomplete items, the value of incomplete construction, and reasons the Work is not complete shall be provided as well as a schedule for completion of work.*
 - 1.3 *Advise the Owner of pending insurance changeover requirements.*
 - 1.4 *Submit specific warranties, workmanship bonds, maintenance agreements, final certifications, and similar documents.*
 - 1.5 *Obtain and submit releases enabling the Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.*
 - 1.6 *For Final Payment, submit as-built record drawings, maintenance manuals, damage or settlement surveys, property surveys, and similar final record information.*

1.7 Deliver tools, spare parts, extra stock, and similar items.

a. Attic Stock:

1.8 Complete final cleanup requirements, including touchup painting.

1.9 Touch up and otherwise repair and restore marred, exposed finishes.

1.10 Compliance with other terms as outlined in the Contract Documents.

1.11 List of all the General Contractor's suppliers, sub-contractors, etc. Include name of firm, address, FEIN number and CT Tax I.D. number.

2. **Inspection Procedures:** The General Contractor shall be ready and prepared when they request a Substantial Completion inspection. If the inspection reveals that the work is not complete, there are extensive punch list items and as the items listed above are not complete, the Construction Administrator, Owner, and Agency will determine the inspection has failed.

3. The General Contractor is responsible for all costs to re-inspect due to a failed inspection.

3.1 The General Contractor will repeat inspection when requested and assured that the Work is substantially complete.

3.2 Results of the completed inspection will form the basis of requirements for Acceptance of the Work.

C. Acceptance of the Work

1. **Preliminary Procedures:** Before requesting a Final Inspection and Certificate of Acceptance and Final Payment, complete the following. List exceptions in the request.

1.1 Submit a copy of the Final Inspection list of items to be completed or corrected, endorsed and dated. The copy of the list shall state that each item has been completed or otherwise resolved for acceptance and shall be endorsed and dated.

1.2 Submit consent of surety to Final Payment.

1.3 Submit evidence of final, continuing insurance coverage complying with insurance requirements.

D. **Reinspection Procedure:** There will be an inspection of 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.

E. Issuance of a Certificate of Acceptance, in accordance with CGS § 4-61(b)(2) as amended, by the Owner does not alter the responsibility of the General Contractor to complete all Work in accordance with the Contract Documents.

F. General Contractor's As-Built Drawings Submittal:

1. **General:** The General Contractor shall not use the As-Built Drawings for construction purposes. Protect General Contractor's As-Built Drawings from deterioration and loss in a secure, fire-resistant location. Provide access to the As-Built Drawings for Owner's and Construction Administrator's reference during normal working hours. Keep documents current; do not permanently conceal any work until required information has been recorded. Failure to keep documents current is sufficient cause to withhold progress payments.
2. **General Contractor's As-Built Drawings:** The General Contractor shall maintain one 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. **Failure to keep As-built Documents current is sufficient cause to withhold progress payments.**
 - 2.1 Mark record sets with erasable pencil to distinguish between variations in separate categories of the Work.
 - 2.2 Mark all new information that is not shown on Contract Drawings.
 - 2.3 Note related Agreement Amendments where applicable.
 - 2.4 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.
 - 2.5 Upon completion of the work, the General Contractor shall produce Hard Copy, Record, Drawings.
 - 2.6 Submit electronic format data of all Coordination Drawing drawings as required by the owner.
 - 2.7 Refer to Section **01 45 00 "Quality Control"** Paragraph **8.3.6** for required as-built drawings and specifications for fire alarm systems.
 - 2.8 Upon completion of the work, the General Contractor shall submit Record Drawings to the Architect and/or Engineer for transferring the changes to the Record Drawings.
- G. **General Contractor's Record Documents:** Within **thirty (30)** Calendar Days after receipt of the General Contractor's marked up "As-Built Drawings", showing all of the significant modifications made during the course of the project, the Architect shall convert the marked up "As-Built" drawings into an electronic pdf format as required by the Owner, using the original A/E contract documents as base drawings. The Contractor's final pdf "Record Documents" (electronic media) shall be made at the Contractor's expense.
- H. **Maintenance Manuals (If Required):** Organize operation and maintenance data into 2 suitable sets of manageable size. Bind properly indexed data in individual, heavy-duty, **2-inch, 3-ring**, vinyl-covered binders, with pocket folders for folded sheet information. Mark appropriate identification on front and spine of each binder according to Section **01 78 23 "Operation and Maintenance Data"**.

I. Final Cleaning:

1. **General:** The Contract Documents require general cleaning during construction. Regular site cleaning is included in **Section 01 74 13 “Progress Cleaning”**.
2. Employ experienced workers or 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. Complete the following cleaning operations before requesting inspection for Certification of Substantial Completion and Certification of Occupancy.
3. **Exterior:**
 - 3.1 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.
 - 3.2 Clean exposed exterior hard-surfaced finishes to a dust-free condition, free of stains, films, and similar foreign substances
 - 3.3 Remove waste and surplus materials, rubbish and construction equipment and facilities from the site, and deposit it legally elsewhere.
 - 3.4 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.
4. **Pest Control:** Engage an experienced, licensed exterminator to make a final inspection and rid the work of rodents, insects, and other pests.
5. **Removal of Protection:** Remove temporary protection and facilities installed for protection of the Work during construction.
6. **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 Agency's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from the site and dispose of lawfully.
 - 6.1 Where extra materials of value remain after completion of associated Work, they become the Agency's property. Dispose of these materials as directed by the Construction Administrator.
 - 6.2 Leave building clean and ready for occupancy. If the Design Builder fails to clean up, the Owner may do so, with the cost charged to the Developer.

01 78 30 WARRANTIES AND BONDS

- 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. Summary:** 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 General Contractor's period for correction of the Work.
- 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. The Divisions 02 through 49 Sections for specific requirements for warranties on products and installations specified to be warranted.
4. Certifications and other commitments and agreements for continuing services to Owner are specified elsewhere in the Contract Documents.
- M.**
- D. Disclaimers and Limitations:** Manufacturer's disclaimers and limitations on product warranties do not relieve the General Contractor of the warranty on the Work that incorporates the products. Manufacturer's disclaimers and limitations on product warranties do not relieve the suppliers, manufacturers, and subcontractors required to countersign special warranties with the General Contractor.
- E. 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.
- F. 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.
- G. 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 General 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.
- H. 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.

- I. 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 General Contractor presents evidence that entities required to countersign such commitments are willing to do so.
- J. The General Contractor shall warranty all materials and workmanship for a period of eighteen months from the date of Acceptance of the Work. In addition, the Contractor shall furnish the warranties listed below. Submit four copies of each to the Architect in the supplier's standard form or in the form given below if there is no standard form available.
- K. The General Contractor shall warranty all materials and workmanship for a period of **eighteen (18)** months from the date of Acceptance of the Work. In addition, the General Contractor shall furnish the warranties listed below. Submit four copies of each to the Architect in the supplier's standard form or in the form given below if there is no standard form available.
- L. **Specification/Warranty Table:** The General Contractor shall provide for all warranties as shown in the Specification/Warranty table:

Specification / Warranty Table			
Item No.	Section No.		Specification Product/Warranty
1	07	2 years	Water Repellents See Spec Section 07 19 00
2	07	20 years	EPDM Roof System (Edge to Edge) BASE BID See Spec Section 07 53 23, 1.10 Warranty, 1.11A
3.	07	30 years	EPDM Roof System (Edge to Edge): SUPPLEMENTAL BID #1 See Spec Section 07 53 23, 1.10 Warranty, 1.11A
4.	07	2 years	Installer's Warranty - Both Base and Supplemental bids See Spec Section 07 53 23, 1.10 Warranty, B
5	07	20 Years (Finish)	Sheer Metal Flashing and Trim See Spec Section 07 52 00
6	07	20 Years (Finish)	Roof Specialties See Spec Section 07 71 00
7	07	20 Years	Roof Accessories See Spec Section 07 72 00

- M. Submit certification that finish materials are fire rated as specified.
N. Form of Warranty: Warranties shall be submitted in following format:

Warranty			
<p>Peter Visentin, AIA Facilities Planning and Architectural Services Southern Connecticut State University 615 Fitch Street Hamden, Connecticut 06514</p> <p>Project Number: SCSU-2022-04 Project Title: Lyman Center – Roof Replacement - 2023</p> <p>I (We) hereby warranty</p> <p>the _____ work on the referenced project for a period of <u>18</u> months</p> <p>from _____, 20 _____ against failures of workmanship and materials in accordance</p> <p>with the requirements of Section _____, Page _____, Paragraph _____, of the Specifications.</p> <p>Installer <input type="checkbox"/> Subcontractor <input type="checkbox"/> Vendor/Suppliers <input type="checkbox"/> Manufacturer <input type="checkbox"/></p> <p>Installer or Subcontractor or Vendor/Suppliers or Manufacturer Name: _____</p> <p>Installer or Subcontractor or Vendor/Suppliers or Manufacturer Signature: _____</p> <p>General Contractor's Name _____</p> <p>General Contractor's Signature: _____</p> <p>or</p> <p>General Contractor's Authorized Agent Signature: _____</p>			

O. Submittals:

1. Submit written warranties prior to the date certified for Substantial Completion. If the General Contractor'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 Owner.
2. Forms for special warranties are included in this Section. Prepare a written document utilizing the appropriate form, ready for execution by the General Contractor's, and by the General Contractor's subcontractor or vendor/supplier, or manufacturer. Submit a draft to the Owner, through the Construction Administrator, for approval prior to final execution.
 - 2.1 Refer to the Divisions 02 through 48 Sections for specific content requirements and particular requirements for submitting special warranties.
3. **Form of Submittal:** At Acceptance of the Work compile **two (2)** copies of each required warranty properly executed by the General Contractor, and by the General Contractor's subcontractor or vendor/supplier, or manufacturer. Organize the warranty documents into an orderly sequence based on the table of contents of the Project Manual.
4. 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-inch by 11-inch (115-by-280-mm)** paper.
 - 4.1 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.
 - 4.2 Identify each binder on the front and spine with the typed or printed title "WARRANTIES," DPW Project Number, Project Title, name of the General Contractor, and name of General Contractor's subcontractor or vendor/supplier, or manufacturer.
- 4.3 When warranted construction requires operation and maintenance manuals, provide additional copies of each required warranty, as necessary, for inclusion in each required manual.

End

Section 01 70 00
Execution and Closeout Procedures

And

Division 01
General Requirements
Small Projects

SECTION 02 41 19 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The Contractor, Subcontractors, and/or suppliers providing goods or services referenced in or related to this Section shall also be bound by the Documents identified in Division 01 Section "Summary", Paragraph 1.1A, entitled "Related Documents."

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Demolition and removal of finish systems, including ceilings and finishes as required.
 - 2. Demolition of existing roofing systems.
 - 3. Removal and salvage of the following:
 - a. The auditorium seating for reinstallation after refurbishment.
- B. Related Sections include the following:
 - 1. Division 01 Section "Summary" for use of premises and Owner-occupancy requirements.
 - 2. Division 01 Section "Temporary Facilities and Controls" for temporary construction and environmental-protection measures for selective demolition operations.
 - 3. Division 01 Section "Cutting and Patching" for cutting and patching procedures.
 - 4. Division 07 Preparation of Re-roofing

1.3 DEFINITIONS

- A. Remove: Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.
- B. Remove and Salvage: Detach items from existing construction and deliver them to Owner.
- C. Remove and Reinstall: Detach items from existing construction, prepare them for reuse, and reinstall them where indicated.
- D. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.4 MATERIALS OWNERSHIP

- A. Unless otherwise indicated, demolition waste becomes property of Contractor.

- B. Historic items, relics, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be encountered during selective demolition remain Owner's property.
 - 1. Carefully remove and salvage each item or object in a manner to prevent damage and deliver promptly to Owner.

1.5 PREINSTALLATION MEETINGS

- A. Pre-demolition Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination." Review methods and procedures related to selective demolition including, but not limited to, the following:
 - 1. Inspect and discuss condition of construction to be selectively demolished.
 - 2. Review structural load limitations of existing structure.
 - 3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
 - 4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
 - 5. Review areas where existing construction is to remain and requires protection.

1.6 INFORMATIONAL SUBMITTALS

- A. Proposed Protection Measures: Submit report, including drawings, that indicates the measures proposed for protecting individuals and property for environmental protection, for dust control and for noise control. Indicate proposed locations and construction of barriers.
- B. Schedule of Selective Demolition Activities: Indicate the following:
 - 1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's on-site operations are uninterrupted.
 - 2. Interruption of utility services. Indicate how long utility services will be interrupted.
 - 3. Coordination for shutoff, capping, and continuation of utility services.
 - 4. Use of elevator and stairs.
 - 5. Locations of proposed dust- and noise-control temporary partitions and means of egress.
 - 6. Coordination of Owner's continuing occupancy of portions of existing building.
 - 7. Means of protection for items to remain and items in path of waste removal from building.
- C. Predemolition Photographs or Video: Submit before Work begins.

1.7 CLOSEOUT SUBMITTALS

- A. Inventory: After selective demolition is complete, submit a list of items that have been removed and salvaged.

- B. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

1.8 PROJECT CONDITIONS

- A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.
 - 1. Comply with requirements specified in Division 01 Section "Summary."
- B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- D. Storage or sale of removed items or materials on-site is not permitted.
- E. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
 - 1. Maintain fire-protection facilities in service during selective demolition operations.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ANSI/ASSE A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Architect.
- B. Survey of Existing Conditions: Record existing conditions by use of preconstruction photographs.
 - 1. Comply with requirements specified in Division 01 Section "Photographic Documentation."

2. Inventory and record the condition of items to be removed and salvaged. Provide photographs of conditions that might be misconstrued as damage caused by salvage operations.
3. Before selective demolition or removal of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction.

3.2 PREPARATION

- A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
 1. Comply with requirements for access and protection specified in Division 01 Section "Temporary Facilities and Controls."
- B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
 1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
 2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
 3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
 4. Cover and protect furniture, furnishings, and equipment that have not been removed.

3.3 SELECTIVE DEMOLITION, GENERAL

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
 1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
 2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
 3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
 5. Maintain adequate ventilation when using cutting torches.

6. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
7. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
8. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
9. Dispose of demolished items and materials promptly. Comply with requirements in Division 01 Section "Construction Waste Management and Disposal."

- B. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and reinstalled in their original locations after selective demolition operations are complete.

3.4 DISPOSAL OF DEMOLISHED MATERIALS

- A. General: Except for items or materials indicated to be recycled, reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them.
1. Do not allow demolished materials to accumulate on-site.
 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
 3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
 4. Comply with requirements specified in Division 01 Section "Construction Waste Management and Disposal."
- B. Burning: Do not burn demolished materials.
- C. Disposal: Transport demolished materials off Owner's property.
1. Include cost of all transportation and disposal.
 2. Provide verification of all disposal trips.
 3. Hazardous materials are to be handled and disposed of in accordance with all State, Local, and Federal regulations.

3.5 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION 02 41 19

SECTION 035113 - CEMENTITIOUS WOOD FIBER DECKS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Monolithic cementitious wood-fiber units.
 - 2. Subpurlin tees.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: Include details at supports, reinforcement at openings, and attachment to other work.
- C. Samples: Show texture, finish, and edge and end configurations of monolithic cementitious wood-fiber units, 12 inches long by width of unit.
 - 1. Include unit with galvanized-steel edge channel.

1.4 INFORMATIONAL SUBMITTALS

- A. Welding certificates.
- B. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for cementitious wood-fiber units.
- C. Research/Evaluation Reports: For cementitious wood-fiber deck, from ICC-ES Evaluation Report, ESR 1112.

1.5 QUALITY ASSURANCE

- A. Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."

- B. Surface-Burning Characteristics: As determined by testing identical products according to ASTM E 84 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
 - 1. Flame-Spread Index: 25 or less.
 - 2. Smoke-Developed Index: 50 or less.
- C. Fire-Resistance Ratings: Where indicated, provide cementitious wood-fiber deck identical to those of assemblies tested for fire resistance per ASTM E 119 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
 - 1. Indicate design designations from UL's "Fire Resistance Directory" or from the listings of another qualified testing agency.
- D. FM approved Tectum deck: Minimum 2" thick. Insulation fasteners must penetrate the deck a minimum of 2" for Class 1-90.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Protect cementitious wood-fiber units from moisture.
- B. Store units on elevated platforms at Project site in a dry, well-ventilated, covered space and stack according to manufacturer's written recommendations.
- C. Handle units to prevent chipping, breaking, cracking, staining, soiling, warping, or other physical damage. Discard damaged units at time of installation.

1.7 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit work to be performed according to manufacturers' written instructions and warranty requirements.
- B. Protect cementitious wood-fiber deck from moisture during installation and while exposed to the weather until permanently covered with subsequent construction.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Cementitious Wood-Fiber Units, General: Manufacturer's standard structural units that are pressure bonded from chemically processed long wood fibers mixed with magnesium oxysulfate hydraulic cement.
 - 1. Noise Reduction Coefficient (NRC): NRC 0.60; ASTM C 423.
 - 2. Light Reflectance: 60 percent; ASTM E 1349.
 - 3. Finish: Manufacturer's standard prime-painted finish.
- B. Extruded-Polystyrene Insulation: ASTM C 578, Type IV.

- C. Expanded-Polystyrene Insulation: ASTM C 578, Type I.

2.2 MONOLITHIC CEMENTITIOUS WOOD-FIBER UNITS

- A. Tile: Manufacturer's standard, rabbet-edged, cementitious wood-fiber units.
 - 1. **Products:** Subject to compliance with requirements, provide one of the following:
 - 2. Thickness: 2 inches.
 - 3. Size: Manufacturer's standard width and length.
 - 4. End Configuration: Square.

2.3 SUBPURLINS

- A. Bulb-Tee Subpurlins: Hot-rolled steel bulb tees complying with ASTM A 499 of length required to span three support spacings; shop painted with metal primer.

2.4 ACCESSORIES

- A. Gypsum Concrete Grout: Factory-packaged, gypsum concrete grout formulation recommended by cementitious wood-fiber unit manufacturer with a minimum compressive strength of 500 psi.
- B. Anchor Clips: Manufacturer's standard formed anchor clips of 0.0478-inch-thick minimum, galvanized-steel sheet, of type and configuration required for deck system indicated.
- C. Screws: Manufacturer's recommended, corrosion-resistant screw fasteners and washers, self-drilling, self-tapping, of length required for deck and structural framing indicated.
- D. Nails: Manufacturer's recommended corrosion-resistant nails of size and length required for deck and structural framing indicated.
- E. Filler Strips: Insulation strips, same as used in manufacture of insulated composite cementitious wood-fiber units.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine structural support framing for compliance with requirements, installation tolerances, and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Comply with manufacturer's written instructions for installing cementitious wood-fiber deck.
 - 1. Install fastenings according to manufacturer's written instructions unless otherwise indicated.
- B. Deck Interruptions: Provide barrier seals or blocking at overhangs to form wind seals and at partitions and walls to form sound seals unless otherwise indicated.

3.3 ROOF DECK INSTALLATION

- A. Tile and Subpurlin Roof Deck: Space subpurlin members as indicated. Attach subpurlins to each support with 3/4-inch-long minimum, fillet welds on both sides of flanges at ends of members and on alternate sides at intermediate structural supports.
 - 1. Lay tile with rabbeted edges supported on subpurlins.
 - 2. Lay tile with square-cut ends concealed and supported on cross subpurlins.
 - 3. Lay tile with tongue-and-groove ends exposed in pattern indicated.
 - 4. Fill void with gypsum concrete grout where edge joints meet subpurlins. Strike grout flush with top of tile and feather uneven top surfaces to a plane.
 - 5. Insulation fasteners must penetrate the deck a minimum of 2" for F Class 1-90.

3.4 CLEANING AND PROTECTION

- A. Protect top surfaces of deck from damage caused by construction operations.
- B. Protect exposed bottom surfaces of deck from soiling and damage during handling and construction.
- C. Clean exposed bottom surfaces of completed deck and touch up minor damage to surfaces as approved by Architect.
- D. Provide final protection and maintain conditions in a manner acceptable to manufacturer and Installer that ensures that cementitious wood-fiber deck is without damage or deterioration at time of Substantial Completion.
- E. Remove and replace deteriorated and damaged deck units.

END OF SECTION 035113

SECTION 04 01 10.02 – EXTERIOR MASONRY CLEANING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes cleaning the following:
 - 1. Unit masonry surfaces.
 - 2. Stone surfaces.

1.3 DEFINITIONS

- A. Very Low-Pressure Spray: Under 100 psi.
- B. Low-Pressure Spray: 100 to 400 psi; 4 to 6 gpm.

1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.
 - 1. Review methods and procedures related to cleaning masonry including, but not limited to, the following:
 - a. Verify masonry-cleaning equipment and facilities needed to make progress and avoid delays.
 - b. Materials, material application, and sequencing.
 - c. Cleaning program.
 - d. Coordination with building occupants.

1.5 SEQUENCING AND SCHEDULING

- A. Work Sequence: Perform masonry-cleaning work in the following sequence:
 - 1. Remove plant growth.

2. Inspect for open mortar joints. Where repairs are required, delay further cleaning work until after repairs are completed, cured, and dried to prevent the intrusion of water and other cleaning materials into the wall.
3. Remove paint.
4. Clean masonry surfaces.
5. Where water repellents are to be used on or near masonry, delay application of these chemicals until after cleaning.

- B. As scaffolding is removed, patch anchor holes used to attach scaffolding. Patch holes in masonry units according to masonry repair Sections. Patch holes in mortar joints according to masonry repointing Sections.

1.6 ACTION SUBMITTALS

- A. Product Data: For each type of product.
1. Include material descriptions and application instructions.
 2. Include test data substantiating that products comply with requirements.

1.7 INFORMATIONAL SUBMITTALS

- A. Cleaning program.

1.8 QUALITY ASSURANCE

- A. Cleaning Program: Prepare a written cleaning program that describes cleaning process in detail, including materials, methods, and equipment to be used; protection of surrounding materials; and control of runoff during operations. Include provisions for supervising worker performance and preventing damage.
1. If materials and methods other than those indicated are proposed for any phase of cleaning work, add a written description of such materials and methods, including evidence of successful use on comparable projects and demonstrations to show their effectiveness for this Project.
- B. Mockup:
1. Before full-scale application, test products to be used on test panels.
 2. Review manufacturer's product data sheets to determine suitability of product for each surface.
 3. Apply products using manufacturer-approved application methods, determining actual requirements for application.
 4. After 48 hours, review effectiveness of cleaning or treatment, compatibility with substrates, and ability to achieve desired results.
 5. Obtain approval by Architect and CA of workmanship, color, and texture before proceeding with work.
 6. Test Panels: Inconspicuous sections within scope of work area.

- a. Location and number as selected by Architect.
- b. Size: 3 feet by 3 feet
- c. Repair unacceptable work to the satisfaction of the Architect and CA.

1.9 FIELD CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit masonry-cleaning work to be performed according to product manufacturers' written instructions and specified requirements.
- B. Clean masonry surfaces only when air temperature is 40 deg F and above and is predicted to remain so for at least seven days after completion of cleaning.

PART 2 - PRODUCTS

2.1 CLEANING MATERIALS

- A. Manufacturer (Basis of Design): PROSOCO, Inc., 3741 Greenway Circle, Lawrence, KS 66046. Phone: (800) 255-4255; Fax: (785) 830-9797. E-mail: CustomerCare@prosoco.com
 - 1. Sure Klean T-1261 Hard Water Deposit Remover: a strong, concentrated acidic cleaning compound formulated for removal of hard-water stains and other salts from masonry surfaces. Application to masonry surfaces loosens and solubilizes water deposits and other surface stains. Pressure rinsing then removes these unsightly stains from the masonry surface
 - 2. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Diedrich Technologies, Inc.
 - b. EaCo Chem, Inc.
- B. Water: Potable.

PART 3 - EXECUTION

3.1 PROTECTION

- A. Remove downspouts and associated hardware adjacent to immediate work area and store during masonry cleaning. Reinstall when masonry cleaning is complete.
 - 1. Provide temporary rain drainage during work to direct water away from building.

3.2 CLEANING MASONRY, GENERAL

- A. Cleaning Appearance Standard: Cleaned surfaces are to have a uniform appearance as viewed from 20 feet away by Architect.

- B. Proceed with cleaning in an orderly manner; work from bottom to top of each scaffold width and from one end of each elevation to the other. Ensure that dirty residues and rinse water do not wash over dry, cleaned surfaces.
- C. Use only those cleaning methods indicated for each masonry material and location.
 - 1. Brushes: Do not use wire brushes or brushes that are not resistant to chemical cleaner being used.
 - 2. Spray Equipment: Use spray equipment that provides controlled application at volume and pressure indicated, measured at nozzle. Adjust pressure and volume to ensure that cleaning methods do not damage surfaces, including joints.
 - a. Equip units with pressure gages.
 - b. For water-spray application, use fan-shaped spray that disperses water at an angle of 25 to 50 degrees.
- D. Perform each cleaning method indicated in a manner that results in uniform coverage of all surfaces, including corners, moldings, and interstices, and that produces an even effect without streaking or damaging masonry surfaces. Keep wall wet below area being cleaned to prevent streaking from runoff.
- E. Perform additional general cleaning, paint and stain removal, and spot cleaning of small areas that are noticeably different when viewed according to the "Cleaning Appearance Standard" Paragraph, so that cleaned surfaces blend smoothly into surrounding areas.
- F. Water Application Methods:
 - 1. Water-Spray Applications: Unless otherwise indicated, hold spray nozzle at least 6 inches from masonry surface and apply water in horizontal back-and-forth sweeping motion, overlapping previous strokes to produce uniform coverage.
- G. Rinse off chemical residue and soil by working upward from bottom to top of each treated area at each stage or scaffold setting. Periodically during each rinse, test pH of rinse water running off of cleaned area to determine that chemical cleaner is completely removed.
 - 1. Apply neutralizing agent and repeat rinse if necessary to produce tested pH of between 6.7 and 7.5.
- H. After cleaning is complete, remove protection no longer required. Remove tape and adhesive marks.

3.3 PRELIMINARY CLEANING

- A. Removing Plant Growth: Completely remove visible plant, moss, and shrub growth from masonry surfaces. Carefully remove plants, creepers, and vegetation by cutting at roots and allowing remaining growth to dry as long as possible before removal. Remove loose soil and plant debris from open joints to whatever depth they occur.

- B. Preliminary Cleaning: Before beginning general cleaning, remove extraneous substances that are resistant to planned cleaning methods. Extraneous substances include paint, calking, asphalt, and tar.
1. Carefully remove heavy accumulations of rigid materials from masonry surface with sharp chisel. Do not scratch or chip masonry surface.
 2. Remove paint and calking with Insert requirement.
 - a. Comply with requirements in "Paint Removal" Article.
 - b. Repeat application up to two times if needed.
 3. Remove asphalt and tar with Insert requirement.
 - a. Comply with requirements in "Paint Removal" Article.
 - b. Allow paint remover to remain on surface for 10 to 30 minutes.
 - c. Repeat application if needed.

3.4 CLEANING MASONRY

- A. Cold-Water Wash: Use cold water applied by low-pressure spray.
- B. Application: Before applying, read "Preparation" and "Safety Information" sections in the Manufacturer's Product Data Sheet for 2010 All Surface Cleaner. Use in concentrate or dilute 2010 All Surface Cleaner concentrate with 1-10 parts water. Refer to Product Data Sheet for recommended dilution for intended use.
1. Working from bottom to top, prewet the surface with clean water.
 2. Apply the diluted cleaning solution to the masonry surface using a brush or low-pressure spray.
 3. Let the cleaner stay on the surface 1-10 minutes, based on testing. Gently scrub heavily soiled areas.
 4. Working from bottom to top, rinse the surface thoroughly with clean water. The best combination of rinsing pressure and water volume is provided by masonry washing equipment generating 400-1000 psi with a water flow rate of 6-8 gallons per minute delivered through a 15-45 degree fan spray tip. Equipment should be adjustable to reduce water flow rate and rinsing pressure as required for controlled cleaning of more sensitive surfaces. See also "Equipment" section of the Product Data Sheet.
 5. Repeat steps 1 through 4 if necessary.

Note: Do not let cleaning solution dry on the surface. If drying occurs, lightly wet surfaces with fresh water and reapply the cleaner in a gentle scrubbing manner.

3.5 FIELD QUALITY CONTROL

- A. Manufacturer's Field Service: Engage chemical-cleaner manufacturer's factory-authorized service representatives for consultation and Project-site inspection and provide on-site assistance when requested by Architect. Have chemical-cleaner manufacturer's factory-authorized service representatives visit Project site not less than once to observing progress and quality of the work.

3.6 FINAL CLEANING

- A. Clean adjacent non-masonry surfaces of spillage and debris. Use detergent and soft brushes or cloths.
- B. Remove debris from gutters and downspouts. Rinse off roof and flush gutters and downspouts.
- C. Remove masking materials, leaving no residues that could trap dirt.

END OF SECTION 040110

SECTION 055000 - METAL FABRICATIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Steel framing and supports for applications where framing and supports are not specified in other Sections.
- B. Related Requirements:
 - 1. Section 042000 "Unit Masonry" for installing loose lintels, anchor bolts, and other items built into unit masonry.

1.3 COORDINATION

- A. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturers' written recommendations to ensure that shop primers and topcoats are compatible with one another.
- B. Coordinate installation of metal fabrications that are anchored to or that receive other work. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

1.4 ACTION SUBMITTALS

- A. Product Data: For the following:
 - 1. Paint products.
- B. Shop Drawings: Show fabrication and installation details. Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items. Provide Shop Drawings for the following:
 - 1. Steel framing and supports for applications where framing and supports are not specified in other Sections.

1.5 INFORMATIONAL SUBMITTALS

- A. Welding certificates.
- B. Paint Compatibility Certificates: From manufacturers of topcoats applied over shop primers, certifying that shop primers are compatible with topcoats.

1.6 QUALITY ASSURANCE

- A. Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."
- B. Welding Qualifications: Qualify procedures and personnel according to the following:
 - 1. AWS D1.1/D1.1M, "Structural Welding Code - Steel."
 - 2. AWS D1.2/D1.2M, "Structural Welding Code - Aluminum."
 - 3. AWS D1.6/D1.6M, "Structural Welding Code - Stainless Steel."

1.7 FIELD CONDITIONS

- A. Field Measurements: Verify actual locations of walls and other construction contiguous with metal fabrications by field measurements before fabrication.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes acting on exterior metal fabrications by preventing buckling, opening of joints, overstressing of components, failure of connections, and other detrimental effects.
 - 1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

2.2 METALS

- A. Metal Surfaces, General: Provide materials with smooth, flat surfaces unless otherwise indicated. For metal fabrications exposed to view in the completed Work, provide materials without seam marks, roller marks, rolled trade names, or blemishes.
- B. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.
- C. Stainless-Steel Sheet, Strip, and Plate: ASTM A 240/A 240M or ASTM A 666, Type 304.
- D. Stainless-Steel Bars and Shapes: ASTM A 276, Type 304.
- E. Steel Tubing: ASTM A 500/A 500M, cold-formed steel tubing.

- F. Steel Pipe: ASTM A 53/A 53M, Standard Weight (Schedule 40) unless otherwise indicated.
- G. Slotted Channel Framing: Cold-formed metal box channels (struts) complying with MFMA-4.
 - 1. Size of Channels: 1-5/8 by 1-5/8 inches.
- H. Cast Iron: Either gray iron, ASTM A 48/A 48M, or malleable iron, ASTM A 47/A 47M, unless otherwise indicated.
- I. Aluminum Plate and Sheet: ASTM B 209, Alloy 6061-T6.
- J. Aluminum Castings: ASTM B 26/B 26M, Alloy 443.0-F.
- K. Bronze Castings: ASTM B 584, Alloy UNS No. C83600 (leaded red brass) or No. C84400 (leaded semired brass).

2.3 MISCELLANEOUS MATERIALS

- A. Universal Shop Primer: Fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with MPI#79 and compatible with topcoat.
 - 1. Use primer containing pigments that make it easily distinguishable from zinc-rich primer.

2.4 FABRICATION, GENERAL

- A. Shop Assembly: Preassemble items in the shop to greatest extent possible. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.
- B. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.
- C. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
- D. Form exposed work with accurate angles and surfaces and straight edges.
- E. Weld corners and seams continuously to comply with the following:
 - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 - 2. Obtain fusion without undercut or overlap.
 - 3. Remove welding flux immediately.
 - 4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing .

- F. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners or welds where possible. Where exposed fasteners are required, use Phillips flat-head (countersunk) fasteners unless otherwise indicated. Locate joints where least conspicuous.
- G. Fabricate seams and other connections that are exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.
- H. Cut, reinforce, drill, and tap metal fabrications as indicated to receive finish hardware, screws, and similar items.
- I. Provide for anchorage of type indicated; coordinate with supporting structure. Space anchoring devices to secure metal fabrications rigidly in place and to support indicated loads.
- J. Where units are indicated to be cast into concrete or built into masonry, equip with integrally welded steel strap anchors, 1/8 by 1-1/2 inches, with a minimum 6-inch embedment and 2-inch hook, not less than 8 inches from ends and corners of units and 24 inches o.c., unless otherwise indicated.

2.5 MISCELLANEOUS FRAMING AND SUPPORTS

- A. General: Provide steel framing and supports not specified in other Sections as needed to complete the Work.
- B. Fabricate units from steel shapes, plates, and bars of welded construction unless otherwise indicated. Fabricate to sizes, shapes, and profiles indicated and as necessary to receive adjacent construction.
 - 1. Fabricate units from slotted channel framing where indicated.
 - 2. Furnish inserts for units installed after concrete is placed.
- C. Prime: zinc-rich primer.

2.6 FINISHES, GENERAL

- A. Finish metal fabrications after assembly.
- B. Finish exposed surfaces to remove tool and die marks and stretch lines, and to blend into surrounding surface.

2.7 STEEL AND IRON FINISHES

- A. Shop prime iron and steel items unless they are to be embedded in concrete, sprayed-on fireproofing, or masonry, or unless otherwise indicated.
- B. Preparation for Shop Priming: Prepare surfaces to comply with SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning." SSPC-SP 3, "Power Tool Cleaning." And requirements indicated below:

1. Exterior Items: SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."
 2. Items Indicated to Receive Zinc-Rich Primer: SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."
 3. Other Items: SSPC-SP 3, "Power Tool Cleaning."
- C. Shop Priming: Apply shop primer to comply with SSPC-PA 1, "Paint Application Specification No. 1: Shop, Field, and Maintenance Painting of Steel," for shop painting.
1. Stripe paint corners, crevices, bolts, welds, and sharp edges.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.
- B. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.
- C. Field Welding: Comply with the following requirements:
1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 2. Obtain fusion without undercut or overlap.
 3. Remove welding flux immediately.
 4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.
- D. Fastening to In-Place Construction: Provide anchorage devices and fasteners where metal fabrications are required to be fastened to in-place construction. Provide threaded fasteners for use with concrete and masonry inserts, toggle bolts, through bolts, lag screws, wood screws, and other connectors.
- E. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar construction.

3.2 INSTALLING MISCELLANEOUS FRAMING AND SUPPORTS

- A. General: Install framing and supports to comply with requirements of items being supported, including manufacturers' written instructions and requirements indicated on Shop Drawings.

3.3 ADJUSTING AND CLEANING

- A. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas. Paint uncoated and abraded areas with the same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.
 - 1. Apply by brush or spray to provide a minimum 2.0-mil dry film thickness.
- B. Touchup Painting: Cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint are specified in Section 099113 "Exterior Painting." And Section 099123 "Interior Painting."

END OF SECTION 055000

SECTION 061053 - MISCELLANEOUS ROUGH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Rooftop equipment bases and support curbs.
 - 2. Wood blocking, cants, and nailers.

1.3 DEFINITIONS

- A. Dimension Lumber: Lumber of 2 inches nominal or greater but less than 5 inches nominal in least dimension.

1.4 SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.
 - 1. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Include physical properties of treated materials based on testing by a qualified independent testing agency.
 - 2. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.
 - 3. Include copies of warranties from chemical treatment manufacturers for each type of treatment.
 - 4. Installation Data: per FM Global Property Loss Prevention
 - a. Submit technical data sheets to show compliance with installation requirements of FM Global Property Loss Prevention Data Sheet 1-49, Perimeter Flashing.
 - b. Include information on the type of fasteners used, fastening rates, and drawings.
 - c. Contractor to provide data to FM Global for review; copy Architect.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Stack lumber flat with spacers between each bundle to provide air circulation. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

- A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
 - 1. Factory mark each piece of lumber with grade stamp of grading agency.
 - 2. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber.
 - 3. Provide dressed lumber, S4S, unless otherwise indicated.

2.2 FIRE-RETARDANT-TREATED MATERIALS

- A. General: Comply with performance requirements in AWPAC20 (lumber).
 - 1. Use treatment that does not promote corrosion of metal fasteners.
 - 2. Use Exterior type for exterior locations and where indicated.
- B. Identify fire-retardant-treated wood with appropriate classification marking of testing and inspecting agency acceptable to authorities having jurisdiction.
- C. For exposed items indicated to receive a stained or natural finish, use chemical formulations that do not bleed through, contain colorants, or otherwise adversely affect finishes.
- D. Application: Treat all miscellaneous carpentry, unless otherwise indicated.

2.3 MISCELLANEOUS LUMBER

- A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:
 - 1. Blocking.
 - 2. Nailers.
 - 3. Rooftop equipment bases and support curbs.
 - 4. Cants.
- B. Use minimum 1-1/2 by 5-1/2 in. (40 by 140 mm) wood nailers of pressure-treated or untreated Douglas Fir, Southern Yellow Pine, or wood having similar decay-resistant properties.

- C. For blocking not used for attachment of other construction Utility, Stud, or No. 3 grade lumber of any species may be used provided that it is cut and selected to eliminate defects that will interfere with its attachment and purpose.
- D. For blocking and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work.

2.4 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and manufacture.
 - 1. Where carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.
- B. Nails, Brads, and Staples: ASTM F 1667.
- C. Power-Driven Fasteners: NES NER-272.
- D. Wood Screws: ASME B18.6.1.
- E. Screws for Fastening to Cold-Formed Metal Framing: ASTM C 954, except with wafer heads and reamer wings, length as recommended by screw manufacturer for material being fastened.
- F. Lag Bolts: ASME B18.2.1.
- G. Bolts: Steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and, where indicated, flat washers.
- H. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to 6 times the load imposed when installed in unit masonry assemblies and equal to 4 times the load imposed when installed in concrete as determined by testing per ASTM E 488 conducted by a qualified independent testing and inspecting agency.
 - 1. Material: Carbon-steel components, zinc plated to comply with ASTM B 633, Class Fe/Zn 5.
 - 2. Material: Stainless steel with bolts and nuts complying with ASTM F 593 and ASTM F 594, Alloy Group 1 or 2.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Set carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit carpentry to other construction; scribe and cope as needed for accurate fit. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.
- B. Framing Standard: Comply with AF&PA's "Details for Conventional Wood Frame Construction," unless otherwise indicated.
- C. Do not splice structural members between supports, unless otherwise indicated.
- D. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim.
 - 1. Provide metal clips for fastening gypsum board or lath at corners and intersections where framing or blocking does not provide a surface for fastening edges of panels. Space clips not more than 16 inches o.c.
- E. Provide fire blocking in furred spaces, stud spaces, and other concealed cavities as indicated and as follows:
 - 1. Fire block concealed spaces of wood-framed walls and partitions at each floor level, at ceiling line of top story, and at not more than 96 inches o.c. Where fire blocking is not inherent in framing system used, provide closely fitted solid wood blocks of same width as framing members and 2-inch nominal-thickness.
 - 2. Fire block concealed spaces behind combustible cornices and exterior trim at not more than 20 feet o.c.
- F. Sort and select lumber so that natural characteristics will not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.
- G. Securely attach carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
 - 1. NES NER-272 for power-driven fasteners.
 - 2. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code.
 - 3. FM Global Property Loss Prevention Data Sheet 1-49, Perimeter Flashing.
- H. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood; do not countersink nail heads, unless otherwise indicated.

3.2 WOOD BLOCKING, AND NAILER INSTALLATION

- A. Install where indicated and where required for attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.

- B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces, unless otherwise indicated.

3.3 PROTECTION

- A. Protect rough carpentry from weather. If, despite protection, rough carpentry becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

END OF SECTION 061053

SECTION 070150.19 - PREPARATION FOR RE-ROOFING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Roof tear-off.
 - 2. Removal of base flashings.
- B. Related Sections:
 - 1. Section 011100 "Summary" for use of the premises and phasing requirements.
 - 2. Section 015000 "Temporary Facilities and Controls" for temporary construction and environmental-protection measures for reroofing preparation.

1.3 MATERIALS OWNERSHIP

- A. Except for items or materials indicated to be reused, reinstalled, or otherwise indicated to remain Owner's property, demolished materials shall become Contractor's property and shall be removed from Project site.

1.4 DEFINITIONS

- A. Roofing Terminology: Refer to ASTM D 1079 and glossary in NRCA's "The NRCA Roofing and Waterproofing Manual" for definition of terms related to roofing work in this Section.
- B. Existing Membrane Roofing Systems: Built-up asphalt roof system and EPDM roof system; consisting of roofing membrane, roof insulation, surfacing, and components and accessories between deck and roofing membrane.
- C. Roof Tear-Off: Removal of existing membrane roofing system from deck.
- D. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and reinstalled.
- E. Existing to Remain: Existing items of construction that are not indicated to be removed.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer including certificate that Installer is licensed to perform asbestos abatement.
- B. Fastener pull-out test report.
- C. Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including exterior and interior finish surfaces, that might be misconstrued as having been damaged by reroofing operations. Submit before Work begins.
- D. Landfill Records: Indicate receipt and acceptance of hazardous wastes, such as asbestos-containing material, by a landfill facility licensed to accept hazardous wastes.

1.7 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning membrane roofing removal. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Reroofing Conference: Conduct conference at Project site.
 - 1. Meet with Owner; Architect; Owner's insurer if applicable; testing and inspecting agency representative; roofing system manufacturer's representative; deck Installer; roofing Installer including project manager, superintendent, and foreman; and installers whose work interfaces with or affects reroofing including installers of roof accessories and roof-mounted equipment.
 - 2. Review methods and procedures related to roofing system tear-off and replacement including, but not limited to, the following:
 - a. Reroofing preparation, including membrane roofing system manufacturer's written instructions.
 - b. Temporary protection requirements for existing roofing system that is to remain during and after installation.
 - c. Existing roof drains and roof drainage during each stage of reroofing, and roof drain plugging and plug removal requirements.
 - d. Construction schedule and availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - e. Existing deck removal procedures and Owner notifications.
 - f. Condition and acceptance of existing roof deck and base flashing substrate for reuse.
 - g. Structural loading limitations of deck during reroofing.
 - h. Base flashings, special roofing details, drainage, penetrations, equipment curbs, and condition of other construction that will affect reroofing.

- i. HVAC shutdown and sealing of air intakes.
- j. Shutdown of fire-suppression, -protection, and -alarm and -detection systems.
- k. Governing regulations and requirements for insurance and certificates if applicable.
- l. Existing conditions that may require notification of Architect before proceeding.

1.8 PROJECT CONDITIONS

- A. Owner will occupy portions of building immediately below reroofing area. Conduct reroofing so Owner's operations will not be disrupted. Provide Owner with not less than 72 hours' notice of activities that may affect Owner's operations.
 - 1. Coordinate work activities daily with Owner so Owner can place protective dust or water leakage covers over sensitive equipment or furnishings, shut down HVAC and fire-alarm or -detection equipment if needed, and evacuate occupants from below the work area.
 - 2. Before working over structurally impaired areas of deck, notify Owner to evacuate occupants from below the affected area. Verify that occupants below the work area have been evacuated before proceeding with work over the impaired deck area.
- B. Protect building to be reroofed, adjacent buildings, walkways, site improvements, exterior plantings, and landscaping from damage or soiling from reroofing operations.
- C. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities.
- D. Conditions existing at time of inspection for bidding will be maintained by Owner as far as practical.
 - 1. The results of an analysis of test cores from existing membrane roofing system are available for Contractor's reference.
 - 2. Construction Drawings and Project Manual for existing roofing system are provided for Contractor's reference. Contractor is responsible for conclusions derived from existing documents.
- E. Limit construction loads on roof, equipment wheel loads and uniformly distributed loads.
- F. Weather Limitations: Proceed with reroofing preparation only when existing and forecasted weather conditions permit Work to proceed without water entering existing roofing system or building.

PART 2 - PRODUCTS

2.1 RECOVER BOARDS

- A. Recover Board: as approved per specific RoofNav Assembly:
 - 1. ISOGARD HD, Firestone Building Products.
 - 2. SECUROCK Gypsum-Fiber Roof Board, United States Gypsum Company.

- B. Fasteners: Factory-coated steel fasteners, No. 12 or 14, and metal or plastic plates listed in FM Approval's "Approval Guide," designed for fastening recover boards to deck, and as approved per specific RoofNav Assembly.

2.2 AUXILIARY REROOFING MATERIALS

- A. General: Auxiliary reroofing preparation materials recommended by roofing system manufacturer for intended use and compatible with components of new membrane roofing system.
- B. Metal Flashing Sheet: Metal flashing sheet is specified in Section 076200 "Sheet Metal Flashing and Trim."

PART 3 - EXECUTION

3.1 PREPARATION

- A. Coordinate with Owner to shut down air-intake equipment in the vicinity of the Work. Cover air-intake louvers before proceeding with reroofing work that could affect indoor air quality or activate smoke detectors in the ductwork.
- B. During removal operations, have sufficient and suitable materials on-site to facilitate rapid installation of temporary protection in the event of unexpected rain.
- C. Maintain roof drains in functioning condition to ensure roof drainage at end of each workday. Prevent debris from entering or blocking roof drains and conductors. Use roof-drain plugs specifically designed for this purpose. Remove roof-drain plugs at end of each workday, when no work is taking place, or when rain is forecast.
 - 1. If roof drains are temporarily blocked or unserviceable due to roofing system removal or partial installation of new membrane roofing system, provide alternative drainage method to remove water and eliminate ponding. Do not permit water to enter into or under existing membrane roofing system components that are to remain.
- D. Verify that rooftop utilities and service piping have been shut off before beginning the Work.

3.2 ROOF TEAR-OFF

- A. General: Notify Owner each day of extent of roof tear-off proposed for that day and obtain authorization to proceed.
- B. Remove loose aggregate from aggregate-surfaced built-up bituminous roofing using a power broom.
- C. Roof Tear-Off: Remove existing roofing membrane and other membrane roofing system components down to the deck.
 - 1. Remove cover boards, roof insulation, and substrate boards

2. Bitumen and felts that are firmly bonded to concrete decks are permitted to remain if felts are dry. Remove unadhered bitumen and felts and wet felts.
3. Remove fasteners from deck.

3.3 DECK PREPARATION

- A. Inspect deck after tear-off of membrane roofing system.
- B. Verify that concrete substrate is visibly dry and free of moisture. Test for capillary moisture by plastic sheet method according to ASTM D 4263 or by pouring 1 pint of hot roofing asphalt on deck at start of each day's work and at start of each roof area or plane. Do not proceed with roofing work if moisture condenses under the plastic sheet or if asphalt test sample foams or can be easily and cleanly stripped after cooling.
- C. If broken or loose fasteners that secure deck panels to one another or to structure are observed or if deck appears or feels inadequately attached, immediately notify Architect. Do not proceed with installation until directed by Architect.
- D. If deck surface is not suitable for receiving new roofing or if structural integrity of deck is suspect, immediately notify Architect. Do not proceed with installation until directed by Architect.
- E. Provide additional deck securement as indicated on Drawings.
- F. Replace deck as indicated on Drawings. Replacement deck is specified in Section 035113 "Cementitious Wood Fiber Decks."

3.4 EXISTING BASE FLASHINGS

- A. Remove existing base flashings around parapets, curbs, walls, and penetrations.
 1. Clean substrates of contaminants such as asphalt, sheet materials, dirt, and debris.
- B. Do not damage metal counterflashings that are to remain. Replace metal counterflashings damaged during removal with counterflashings of same metal, weight or thickness, and finish. specified in Section 076200 "Sheet Metal Flashing and Trim."
- C. Inspect parapet sheathing for deterioration and damage. If parapet sheathing has deteriorated, immediately notify Architect.

3.5 FASTENER PULL-OUT TESTING

- A. Perform fastener pull-out tests according to SPRI FX-1, and submit test report to Architect and roofing membrane manufacturer before installing new membrane roofing system.
 1. Obtain Architect's and roofing membrane manufacturer's approval to proceed with specified fastening pattern. Roofing membrane manufacturer may furnish revised fastening pattern commensurate with pull-out test results.

3.6 RECOVER BOARD INSTALLATION

- A. Install recover boards over roof insulation with long joints in continuous straight lines and end joints staggered between rows. Loosely butt recover boards together and fasten to deck.
 - 1. Tape joints of recover boards if required by roofing membrane manufacturer.
 - 2. Fasten recover boards to resist wind-uplift pressure at corners, perimeter, and field of roof specified in Section 075323 "EPDM Roofing."
 - 3. Install additional fasteners near board corners and edges as necessary to conform boards to substrate and to adjacent boards.

3.7 DISPOSAL

- A. Collect demolished materials and place in containers. Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.
 - 1. Storage or sale of demolished items or materials on-site is not permitted.
- B. Transport and legally dispose of demolished materials off Owner's property.

END OF SECTION 070150.19

SECTION 071900 - WATER REPELLENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes penetrating water-repellent treatments for the following vertical and horizontal surfaces:
 - 1. Interior unit masonry
 - 2. Exterior clay brick masonry
- B. Related Sections:
 - 1. Section 04 01 10.01 "Interior Masonry Cleaning" for masonry cleaning solution & procedures for unit masonry assemblies.
 - 2. Section 04 01 10.02 "Exterior Masonry Cleaning" for masonry cleaning solution & procedures for exterior clay brick masonry assemblies.

1.3 PERFORMANCE REQUIREMENTS

- A. General Performance: Water repellents shall meet performance requirements indicated without failure due to defective manufacture, fabrication, or installation.
 - 1. Water Repellents: Comply with performance requirements specified, as determined by preconstruction testing on manufacturer's standard substrate assemblies representing those indicated for this Project.
- B. Water Absorption: Minimum 80 percent reduction of water absorption after 24 hours in comparison of treated and untreated specimens.
 - 1. Clay Brick: ASTM C 67.
- C. Water-Vapor Transmission: Comply with one or both of the following:
 - 1. Maximum 10 percent reduction in rate of vapor transmission in comparison of treated and untreated specimens, according to ASTM E 96/E 96M.
 - 2. Minimum 80 percent water-vapor transmission in comparison of treated and untreated specimens, according to ASTM D 1653.

- D. Water Penetration and Leakage through Masonry: Minimum 90 percent reduction in leakage rate in comparison of treated and untreated specimens, according to ASTM E 514.
- E. Durability: Maximum 5 percent loss of water-repellent properties after 2500 hours of weathering according to ASTM G 154 in comparison to water-repellent-treated specimens before weathering.
- F. Chloride-Ion Intrusion in Concrete: NCHRP Report 244, Series II tests.
 - 1. Reduction of Water Absorption: 80 percent.
 - 2. Reduction in Chloride Content: 80 percent.

1.4 PRECONSTRUCTION TESTING

- A. Preconstruction Testing: Installed water repellents shall comply with performance requirements indicated, as evidenced by reports based on Project-specific preconstruction testing of existing substrate assemblies by a qualified testing agency.
 - 1. Select sizes and configurations of assemblies to adequately demonstrate capability of water repellents to comply with performance requirements.
 - 2. In addition to verifying performance requirements, use test applications to verify manufacturer's written instructions for application procedure and optimum rates of product application to substrate assemblies.
 - 3. Notify Architect seven days in advance of the dates and times when assemblies will be tested.

1.5 ACTION SUBMITTALS

- A. Preconstruction Testing : For each type of product indicated.
 - 1. Include manufacturer's printed statement of VOC content.
 - 2. Include manufacturer's recommended number of coats for each type of substrate and spreading rate for each separate coat.
 - 3. Printout of current "MPI Approved Products List" for each product category specified in Part 2 that specifies water repellents approved by MPI, with the proposed product highlighted.
- B. Samples: For each type of water repellent and substrate indicated, 12 by 12 inches in size, with specified water-repellent treatment applied to half of each Sample.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified Applicator.
- B. Product Certificates: For each type of water repellent, from manufacturer.
- C. Preconstruction Testing Reports: For water-repellent-treated substrates.

- D. Field quality-control reports.
- E. Warranty: Special warranty specified in this Section.

1.7 QUALITY ASSURANCE

- A. Applicator Qualifications: An employer of workers trained and approved by manufacturer.
- B. MPI Standards: Comply with MPI standards indicated and provide water repellents listed in its "MPI Approved Products List."
- C. Mockups: Apply water repellent to each type of substrate required.
 - 1. Locate each test application as directed by Architect.
 - 2. Size: 16 sq. ft.
 - 3. Final approval by Architect of water-repellent application will be from test applications.
- D. Preinstallation Conference: Conduct conference at Project site.

1.8 PROJECT CONDITIONS

- A. Limitations: Proceed with application only when the following existing and forecasted weather and substrate conditions permit water repellents to be applied according to manufacturers' written instructions and warranty requirements:
 - 1. Concrete surfaces and mortar have cured for not less than 28 days.
 - 2. Building has been closed in for not less than 30 days before treating wall assemblies.
 - 3. Ambient temperature is above 40 deg F and below 100 deg F and will remain so for 24 hours.
 - 4. Substrate is not frozen and substrate-surface temperature is above 40 deg F and below 100 deg F.
 - 5. Rain or snow is not predicted within 24 hours.
 - 6. Not less than 24 hours have passed since surfaces were last wet.
 - 7. Windy conditions do not exist that might cause water repellent to be blown onto vegetation or surfaces not intended to be treated.

1.9 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer and Applicator agree(s) to repair or replace materials that fail to maintain water repellency specified in "Performance Requirements" Article within specified warranty period.
 - 1. Warranty Period: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PENETRATING WATER REPELLENTS

- A. Exterior Masonry Water Repellent - Siloxane, Penetrating Water Repellent: Clear, containing 10 percent or more solids of oligomeric alkylalkoxysiloxanes; with alcohol, ethanol, mineral spirits, water, or other proprietary solvent carrier; and with 400 g/L or less of VOCs.
 - 1. Basis of Design Product: Subject to compliance with requirements, provide the following:
 - a. Water-Repellent Sealer: Thin coat, liquid applied, hydrophobic, impregnating water-repellent clear sealer consisting of a silane/siloxane aqueous emulsion designed for use on concrete or masonry substrates with 0.5% maximum water absorption with 48 hrs exposure as tested in accordance with ASTM C642; Ghostshield Siloxa-Tek® 8500 as manufactured by KreteTek Industries, Inc.
 - 2. Other manufacturers providing acceptable products include:
 - a. Diedrich Technologies, Inc.
 - b. EaCo Chem, Inc.
 - c. PROSOCO, Inc.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Applicator present, for compliance with requirements and conditions affecting performance of the Work.
 - 1. Verify that surfaces are clean and dry according to water-repellent manufacturer's requirements. Check moisture content in three representative locations by method recommended by manufacturer.
 - 2. Inspect for previously applied treatments that may inhibit penetration or performance of water repellents.
 - 3. Verify that there is no efflorescence or other removable residues that would be trapped beneath the application of water repellent.
 - 4. Verify that required repairs are complete, cured, and dry before applying water repellent.
- B. Test pH level according to water-repellent manufacturer's written instructions to ensure chemical bond to silica-containing or siliceous minerals.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Cleaning: Before application of water repellent, clean substrate of substances that could impair penetration or performance of product according to water-repellent manufacturer's written instructions and as follows:
 - 1. Clay Brick Masonry: ASTM D 5703. Section 040120 "Maintenance of Unit Masonry."
- B. Protect adjoining work, including mortar and sealant bond surfaces, from spillage or blow-over of water repellent. Cover adjoining and nearby surfaces of aluminum and glass if there is the possibility of water repellent being deposited on surfaces. Cover live vegetation.
- C. Coordination with Mortar Joints: Do not apply water repellent until pointing mortar for joints adjacent to surfaces receiving water-repellent treatment has been installed and cured.
- D. Coordination with Sealant Joints: Do not apply water repellent until sealants for joints adjacent to surfaces receiving water-repellent treatment have been installed and cured.
 - 1. Water-repellent work may precede sealant application only if sealant adhesion and compatibility have been tested and verified using substrate, water repellent, and sealant materials identical to those required.

3.3 APPLICATION

- A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect the substrate before application of water repellent and to instruct Applicator on the product and application method to be used.
- B. Apply a heavy-saturation coating of water repellent, on surfaces indicated for treatment, using 15 psi-pressure spray with a fan-type spray nozzle, roller or brush to the point of saturation. Apply coating in dual passes of uniform, overlapping strokes. Remove excess material; do not allow material to puddle beyond saturation. Comply with manufacturer's written instructions for application procedure unless otherwise indicated.
- C. Apply a second saturation coating, repeating first application. Comply with manufacturer's written instructions for limitations on drying time between coats and after rainstorm wetting of surfaces between coats. Consult manufacturer's technical representative if written instructions are not applicable to Project conditions.

3.4 FIELD QUALITY CONTROL

- A. Testing of Water-Repellent Material: Owner reserves the right to invoke the following procedure at any time and as often as Owner deems necessary during the period when water repellent is being applied:
 - 1. Owner will engage the services of a qualified testing agency to sample water-repellent material being used. Samples of material delivered to Project site will be taken, identified, sealed, and certified in presence of Contractor.
 - 2. Testing agency will perform tests for compliance of water-repellent material with product requirements.
 - 3. Owner may direct Contractor to stop applying water repellents if test results show material being used does not comply with product requirements. Contractor shall remove

noncomplying material from Project site, pay for testing, and correct deficiency of surfaces treated with rejected materials, as approved by Architect..

- B. Coverage Test: In the presence of Architect, hose down a dry, repellent-treated surface to verify complete and uniform product application. A change in surface color will indicate incomplete application.
 - 1. Notify Architect seven days in advance of the dates and times when surfaces will be tested.
 - 2. Reapply water repellent until coverage test indicates complete coverage.

3.5 CLEANING

- A. Immediately clean water repellent from adjoining surfaces and surfaces soiled or damaged by water-repellent application as work progresses. Correct damage to work of other trades caused by water-repellent application, as approved by Architect.
- B. Comply with manufacturer's written cleaning instructions.

END OF SECTION 071900

SECTION 07 21 00 – THERMAL INSULATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The Contractor, Subcontractors, and/or suppliers providing goods or services referenced in or related to this Section shall also be bound by the Documents identified in Division 01 Section “Summary”, Paragraph 1.1A, entitled “Related Documents.”

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Sound attenuation insulation.
 - 2. Fire safing insulation.
- B. Related Sections include the following:
 - 1. Division 09 Section "Gypsum Board Assemblies" for installation in metal-framed assemblies of insulation specified by referencing this Section.

1.3 DEFINITIONS

- A. Mineral-Fiber Insulation: Insulation composed of rock-wool fibers, slag-wool fibers, or glass fibers; produced in boards and blanket with latter formed into batts (flat-cut lengths) or rolls.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Samples for Verification: Full-size units for each type of exposed insulation indicated.
- C. Low-emitting product certification.

1.5 INFORMATIONAL SUBMITTALS

- A. Product Test Reports: For each product, for tests performed by a qualified testing agency.

1.6 QUALITY ASSURANCE

- A. Source Limitations: Obtain each type of building insulation through one source from a single manufacturer.

- B. Fire-Test-Response Characteristics: Provide insulation and related materials with the fire-test-response characteristics indicated, as determined by testing identical products per test method indicated below by UL or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify materials with appropriate markings of applicable testing and inspecting agency.
 - 1. Surface-Burning Characteristics: ASTM E 84.
 - 2. Fire-Resistance Ratings: ASTM E 119.
 - 3. Combustion Characteristics: ASTM E 136.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Protect insulation materials from physical damage and from deterioration by moisture, soiling, and other sources. Store inside and in a dry location. Comply with manufacturer's written instructions for handling, storing, and protecting during installation.
- B. Indoor Air Quality Requirements: The following practices shall be implemented in accordance with Division 01 Section "Indoor Air Quality Requirements."
 - 1. Insulations are to be stored per manufacturer's recommendations for allowable temperature and humidity range. Insulations shall not be allowed to become damp.
 - 2. Where feasible, fiberglass, mineral wool, and other fibrous insulations shall be stored separately from materials which have high short-term emissions. Materials with high short-term emissions include, but are not limited to: adhesives, sealants and glazing compounds (specifically those with petrochemical vehicles or carriers); paint, wood preservatives, and finishes; control and/or expansion joint fillers; hard finishes requiring adhesive installation; gypsum board (with associated finish processes and products); and composite or engineered wood products with formaldehyde binders.
 - 3. Where feasible, exposed fiberglass or mineral wool insulations shall not be stored in occupied spaces, near HVAC diffusers (supply or return), or near fresh air intakes.

PART 2 - PRODUCTS

2.1 MINERAL-WOOL BLANKET INSULATION (SOUND ATTENUATION)

- A. Manufacturers: Subject to compliance with requirements, provide one of the following:
 - 1. Johns Manville; MinWool Sound Attenuation Fire Batts (SAFB).
 - 2. Rockwool; AFB.
 - 3. Thermafiber; SAFB.
- B. Unfaced, Mineral-Wool Blanket Insulation: ASTM C 665, Type I (blankets without membrane facing); consisting of fibers; with maximum flame-spread and smoke-developed indexes of 0, per ASTM E 84; passing ASTM E 136 for combustion characteristics.
 - 1. R-Value: Minimum 3.7 per inch.

2. NRC: 1.05 for 3 inch thickness.
3. Nominal density of 2.5 lb/cu. ft minimum.
4. Thickness: As indicated, not less than 3- inches.

2.2 MINERAL-WOOL-BOARD INSULATION (FIRE SAFING)

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 1. Johns Manville; MinWool Safing.
 2. Rockwool; SAFE.
 3. Thermafiber; Safing Insulation.
- B. Unfaced, Mineral-Wool Board Insulation: ASTM C 612; water repellant rigid insulation board with a rigid upper surface, with maximum flame-spread and smoke-developed indexes of zero, per ASTM E 84; passing ASTM E 136 for combustion characteristics.
 1. Nominal density of 4.5 lb/cu. ft. minimum.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Installer present, for compliance with requirements of Sections in which substrates and related work are specified and for other conditions affecting performance.
 1. Proceed with installation only after unsatisfactory conditions have been corrected. Commencement of work indicates acceptance of substrates.

3.2 PREPARATION

- A. Clean substrates of substances harmful to insulation or vapor retarders, including removing projections capable of puncturing vapor retarders or of interfering with insulation attachment.

3.3 INSTALLATION, GENERAL

- A. Comply with insulation manufacturer's written instructions applicable to products and application indicated.
- B. Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed at any time to ice, rain, and snow.
- C. Extend insulation in thickness indicated to envelop entire area to be insulated. Cut and fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.

- D. For preformed insulating units, provide sizes to fit applications indicated and selected from manufacturer's standard thicknesses, widths, and lengths. Apply single layer of insulation units to produce thickness indicated unless multiple layers are otherwise shown or required to make up total thickness.

3.4 INSTALLATION OF GENERAL BUILDING INSULATION

- A. Apply insulation units to substrates by method indicated, complying with manufacturer's written instructions. If no specific method is indicated, bond units to substrate with adhesive or use mechanical anchorage to provide permanent placement and support of units.
- B. Install mineral-fiber insulation in cavities formed by framing members according to the following requirements:
 - 1. Use insulation widths and lengths that fill the cavities formed by framing members. If more than one length is required to fill cavity, provide lengths that will produce a snug fit between ends.
 - 2. Place insulation in cavities formed by framing members to produce a friction fit between edges of insulation and adjoining framing members.
 - 3. For metal-framed wall cavities where cavity heights exceed 96 inches, support unfaced blankets mechanically and support faced blankets by taping flanges of insulation to flanges of metal studs.
- C. Install unfaced, slag-wool-fiber/rock-wool-fiber blanket insulation in penetrations in all non-fire rated horizontal floor/ceiling assemblies, including edge of slab conditions indicated. Fill annular space of penetration to resist the free passage of flame and the products of combustion.

3.5 PROTECTION

- A. Protect installed insulation from damage due to harmful weather exposures, physical abuse, and other causes. Provide temporary coverings or enclosures where insulation is subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.

END OF SECTION 07 21 00

SECTION 075323 - EPDM ROOFING – BASE BID (60 MIL.)

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Adhered EPDM membrane roofing system.
2. Mechanically fastened EPDM membrane roofing system.
3. Vapor retarder.
4. Roof insulation.

B. Related Sections:

1. Section 035113 "Cementitious Wood Fiber Decks" for roof decking replacement.
2. Section 061053 "Miscellaneous Rough Carpentry" for wood nailers, curbs, and blocking.
3. Section 070150.19 "Preparation for Re-Roofing" for recover board beneath new membrane roofing.
4. Section 076200 "Sheet Metal Flashing and Trim" for metal roof penetration flashings, flashings, and counterflashings.
5. Section 079200 "Joint Sealants" for joint sealants, joint fillers, and joint preparation.
6. Section 221423 "Storm Drainage Piping Specialties" for roof drains.

1.3 DEFINITIONS

- A. Roofing Terminology: See ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" for definitions of terms related to roofing work in this Section.

1.4 PERFORMANCE REQUIREMENTS

- A. General Performance: Installed membrane roofing and base flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Membrane roofing and base flashings shall remain watertight.
- B. Material Compatibility: Provide roofing materials that are compatible with one another under conditions of service and application required, as demonstrated by membrane roofing manufacturer based on testing and field experience.

- C. Roofing System Design: Provide membrane roofing system that is designed per FM Global Property Loss Prevention Data Sheets 1-28, Wind Design, and 1-29, Roof Deck Securement and Above Deck Roof Components.
 - 1. Upper roofs (41 feet high)
 - a. Field of roof: 49.2 psf.
 - b. 10' wide perimeters: 74.6 psf.
 - c. Corners (10' by 10'): 106.4 psf.
 - 2. Lower roofs (25 feet high)
 - a. Field of roof: 44.4 psf.
 - b. 4' wide perimeters: 67.3 psf.
 - c. Corners (4' by 4'): 95.9 psf.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For roofing system. Include plans, elevations, sections, details, and attachments to other work.
 - 1. Base flashings and membrane terminations.
 - 2. Tapered insulation, including slopes.
 - 3. Roof plan showing orientation of steel roof deck and orientation of membrane roofing and fastening spacings and patterns for mechanically fastened membrane roofing.
 - 4. Insulation fastening patterns for corner, perimeter, and field-of-roof locations.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified Installer and manufacturer.
- B. Manufacturer Certificate: Signed by roofing manufacturer certifying that membrane roofing system complies with requirements specified in "Performance Requirements" Article.
 - 1. Submit evidence of complying with performance requirements.
- C. Product Test Reports: Based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified testing agency, for components of membrane roofing system.
- D. Research/Evaluation Reports: For components of membrane roofing system, from the ICC-ES.
- E. Warranties: Sample of special warranties.

1.7 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For membrane roofing system to include in maintenance manuals.

1.8 QUALITY ASSURANCE

- A. **Manufacturer Qualifications:** A qualified manufacturer that is UL listed for membrane roofing system identical to that used for this Project.
- B. **Installer Qualifications:** A qualified firm that is approved, authorized, or licensed by membrane roofing system manufacturer to install manufacturer's product and that is eligible to receive manufacturer's special warranty.
- C. **Source Limitations:** Obtain components including roof insulation, fasteners, for membrane roofing system from same manufacturer as membrane roofing or approved by membrane roofing manufacturer.
- D. **Exterior Fire-Test Exposure:** ASTM E 108, Class A; for application and roof slopes indicated, as determined by testing identical membrane roofing materials by a qualified testing agency. Materials shall be identified with appropriate markings of applicable testing agency.
- E. **Fire-Resistance Ratings:** Where indicated, provide fire-resistance-rated roof assemblies identical to those of assemblies tested for fire resistance per ASTM E 119 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
- F. **Preinstallation Roofing Conference:** Conduct conference at Project site.
 - 1. Meet with Owner, Architect, Owner's insurer if applicable, testing and inspecting agency representative, roofing Installer, roofing system manufacturer's representative, deck Installer, and installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.
 - 2. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
 - 3. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - 4. Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening.
 - 5. Review structural loading limitations of roof deck during and after roofing.
 - 6. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect roofing system.
 - 7. Review governing regulations and requirements for insurance and certificates if applicable.
 - 8. Review temporary protection requirements for roofing system during and after installation.
 - 9. Review roof observation and repair procedures after roofing installation.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, approval or listing agency markings, and directions for storing and mixing with other components.

- B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.
 - 1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.
- C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.
- D. Handle and store roofing materials and place equipment in a manner to avoid permanent deflection of deck.

1.10 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.

1.11 WARRANTY

- A. Special Warranty: Manufacturer's standard or customized form, without monetary limitation, in which manufacturer agrees to repair or replace components of membrane roofing system that fail in materials or workmanship within specified warranty period.
 - 1. Special warranty includes membrane roofing, base flashings, roof insulation, fasteners, cover boards, roofing accessories, and other components of membrane roofing system.
 - 2. Warranty Period: 30 years from date of Substantial Completion.
- B. Special Project Warranty: Submit roofing Installer's warranty, on warranty form at end of this Section, signed by Installer, covering Work of this Section, including all components of membrane roofing system such as membrane roofing, base flashing, roof insulation, fasteners, cover boards, substrate boards, vapor retarders, roof pavers, and walkway products, for the following warranty period:
 - 1. Warranty Period: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 EPDM MEMBRANE ROOFING

- A. EPDM: ASTM D 4637, Type I, non-reinforced, uniform, flexible EPDM sheet.
 - 1. Thickness: 60 mils, nominal.
 - 2. Exposed Face Color: Black.
- B. Manufacturers: Subject to compliance with requirements and RoofNav Assemblies, provide products by one of the following:
 - 1. Firestone Building Products, RubberGard (60 Mil)

2. GenFlex Roofing Systems, AFR EPDM (60 mil)
3. ProLink Roofing Systems, GK-0060 (60 Mil)
4. Roofing Products International, Royal Edge LS-FR EPDM (60 Mil)

2.2 PERFORMANCE REQUIREMENTS

- A. General Performance: Installed roofing and base flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Roofing and base flashings shall remain watertight.
- B. FM Global Listing: Roofing, base flashings, and component materials shall be listed in FM Global's "RoofNav" for Class 1 or noncombustible construction, as applicable. Identify materials with FM Global markings.
 1. Upper roofs (41 feet high):
 - a. Minimum safety factor: 2.0.
 - 1) Field of roof: Class 1-105.
 - 2) 10' wide perimeters: Class 1-150.
 - 3) Corners (10' by 10'): Class 1-225.
 2. Lower roofs (25 feet high)
 - a. Minimum safety factor: 2.0.
 - 1) Field of roof: Class 1-90.
 - 2) 4' wide perimeters: Class 1-135.
 - 3) Corners (4' by 4'): Class 1-195.

2.3 AUXILIARY MEMBRANE ROOFING MATERIALS

- A. General: Auxiliary membrane roofing materials recommended by roofing system manufacturer for intended use and compatible with membrane roofing.
 1. Liquid-type auxiliary materials shall comply with VOC limits of authorities having jurisdiction.
 2. Adhesives and sealants that are not on the exterior side of weather barrier shall comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
 - a. Plastic Foam Adhesives: 50 g/L.
 - b. Gypsum Board and Panel Adhesives: 50 g/L.
 - c. Multipurpose Construction Adhesives: 70 g/L.
 - d. Fiberglass Adhesives: 80 g/L.
 - e. Single-Ply Roof Membrane Adhesives: 250 g/L.
 - f. Single-Ply Roof Membrane Sealants: 450 g/L.
 - g. Nonmembrane Roof Sealants: 300 g/L.
 - h. Sealant Primers for Nonporous Substrates: 250 g/L.
 - i. Sealant Primers for Porous Substrates: 775 g/L.
 - j. Other Adhesives and Sealants: 250 g/L.
- B. Sheet Flashing: 60-mil-thick EPDM, partially cured or cured, according to application.

- C. Bonding Adhesive: Manufacturer's standard, water based.
- D. Seaming Material: Single-component, butyl splicing adhesive and splice cleaner.
- E. Lap Sealant: Manufacturer's standard, single-component sealant, colored to match membrane roofing.
- F. Water Cutoff Mastic: Manufacturer's standard butyl mastic sealant.
- G. Metal Termination Bars: Manufacturer's standard, predrilled stainless-steel or aluminum bars, approximately 1 by 1/8 inch thick; with anchors.
- H. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening membrane to substrate, and acceptable to roofing system manufacturer.
- I. Coating: AcryliTop PC-100, Firestone Building Products.
- J. Miscellaneous Accessories: Provide pourable sealers, preformed cone and vent sheet flashings, preformed inside and outside corner sheet flashings, reinforced EPDM securement strips, T-joint covers, in-seam sealants, termination reglets, cover strips, and other accessories.

2.4 VAPOR RETARDER

- A. Polyethylene Film: ASTM D 4397, 6 mils thick, minimum, with maximum permeance rating of 0.13 perm.
 - 1. Tape: Pressure-sensitive tape of type recommended by vapor-retarder manufacturer for sealing joints and penetrations in vapor retarder.
 - 2. Adhesive: Manufacturer's standard lap adhesive, FM Approvals approved for vapor-retarder application.

2.5 ROOF INSULATION

- A. General: Preformed roof insulation boards manufactured or approved by EPDM membrane roofing manufacturer, selected from manufacturer's standard sizes suitable for application, of thicknesses indicated and that produce FM Approvals-approved roof insulation.
- B. Polyisocyanurate Board Insulation: ASTM C 1289, Type II, Class I, Grade 3, felt or glass-fiber mat facer on both major surfaces.
- C. Composite Polyisocyanurate Board Insulation: ASTM C 1289, Type II, Class 1, Grade 2 with factory-applied facing board on one major surface, as indicated below by type, and felt or glass-fiber mat facer on the other.
- D. Tapered Insulation: Provide factory-tapered insulation boards fabricated to slope of 1/4 inch per 12 inches unless otherwise indicated.

- E. Provide preformed saddles, crickets, tapered edge strips, and other insulation shapes where indicated for sloping to drain. Fabricate to slopes indicated.

2.6 INSULATION ACCESSORIES

- A. General: Furnish roof insulation accessories recommended by insulation manufacturer for intended use and compatibility with membrane roofing.
- B. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening roof insulation and cover boards to substrate, and acceptable to roofing system manufacturer.
- C. Modified Asphaltic Insulation Adhesive: Insulation manufacturer's recommended modified asphalt, asbestos-free, cold-applied adhesive formulated to attach roof insulation to substrate or to another insulation layer.
- D. Full-Spread Applied Insulation Adhesive: Insulation manufacturer's recommended spray-applied, low-rise, two-component urethane adhesive formulated to attach roof insulation to substrate or to another insulation layer.
- E. Cover Board: As per Section 070150.19 "Preparation for Re-Roofing".

2.7 ASPHALT MATERIALS

- A. Roofing Asphalt: ASTM D 312, Type III or Type IV.

2.8 WALKWAYS

- A. Flexible Walkways: Factory-formed, nonporous, heavy-duty, solid-rubber, slip-resisting, surface-textured walkway pads or rolls, approximately 3/16 inch thick, and acceptable to membrane roofing system manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with the following requirements and other conditions affecting performance of roofing system:
 - 1. Verify that roof openings and penetrations are in place and curbs are set and braced and that roof drain bodies are securely clamped in place.
 - 2. Verify that wood blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation.
 - 3. Verify that surface plane flatness and fastening of steel roof deck complies with requirements in Section 053100 "Steel Decking."

4. Verify that minimum concrete drying period recommended by roofing system manufacturer has passed.
5. Verify that concrete substrate is visibly dry and free of moisture. Test for capillary moisture by plastic sheet method according to ASTM D 4263.
6. Verify that concrete curing compounds that will impair adhesion of roofing components to roof deck have been removed.

- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing installation according to roofing system manufacturer's written instructions. Remove sharp projections.
- B. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast.
- C. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at the end of the workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.
- D. Install acoustical roof deck rib insulation strips immediately before installation of overlying construction and to remain dry.

3.3 VAPOR-RETARDER INSTALLATION

- A. Polyethylene Film: Loosely lay polyethylene-film vapor retarder in a single layer over area to receive vapor retarder, side and end lapping each sheet a minimum of 2 inches and 6 inches, respectively.
 1. Continuously seal side and end laps with tape.
- B. Completely seal vapor retarder at terminations, obstructions, and penetrations to prevent air movement into membrane roofing system.

3.4 INSULATION INSTALLATION

- A. Coordinate installing membrane roofing system components so insulation is not exposed to precipitation or left exposed at the end of the workday.
- B. Comply with membrane roofing system and insulation manufacturer's written instructions for installing roof insulation.
- C. Install tapered insulation under area of roofing to conform to slopes indicated.

- D. Install insulation under area of roofing to achieve required thickness. Where overall insulation thickness is 2.7 inches or greater, install two or more layers with joints of each succeeding layer staggered from joints of previous layer a minimum of 6 inches in each direction.
 - 1. Where installing composite and noncomposite insulation in two or more layers, install noncomposite board insulation for bottom layer and intermediate layers, if applicable, and install composite board insulation for top layer.
- E. Trim surface of insulation where necessary at roof drains so completed surface is flush and does not restrict flow of water.
- F. Install insulation with long joints of insulation in a continuous straight line with end joints staggered between rows, abutting edges and ends between boards. Fill gaps exceeding 1/4 inch with insulation.
 - 1. Cut and fit insulation within 1/4 inch of nailers, projections, and penetrations.
- G. Adhered Insulation: Install each layer of insulation and adhere to substrate as follows:
 - 1. Set each layer of insulation in a uniform coverage of full-spread insulation adhesive, firmly pressing and maintaining insulation in place.
- H. Mechanically Fastened and Adhered Insulation: Install first layer of insulation to deck using mechanical fasteners specifically designed and sized for fastening specified board-type roof insulation to deck type.
 - 1. Fasten insulation according to requirements in FM Global's "RoofNav" for specified Windstorm Resistance Classification.
 - 2. Fasten insulation to resist uplift pressure at corners, perimeter, and field of roof.
- I. Install cover boards over insulation with long joints in continuous straight lines with end joints staggered between rows. Offset joints of insulation below a minimum of 6 inches in each direction. Loosely butt cover boards together and fasten to roof deck.
 - 1. Fasten cover boards according to requirements in FM Global's "RoofNav" for specified Windstorm Resistance Classification.
 - 2. Fasten cover boards to resist uplift pressure at corners, perimeter, and field of roof.

3.5 ADHERED MEMBRANE ROOFING INSTALLATION

- A. Adhere membrane roofing over area to receive roofing according to membrane roofing system manufacturer's written instructions. Unroll membrane roofing and allow to relax before installing.
- B. Start installation of membrane roofing in presence of membrane roofing system manufacturer's technical personnel.
- C. Accurately align membrane roofing and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.

- D. Bonding Adhesive: Apply to substrate and underside of membrane roofing at rate required by manufacturer and allow to partially dry before installing membrane roofing. Do not apply to splice area of membrane roofing.
- E. Hot Roofing Asphalt: Apply a solid mopping of hot roofing asphalt to substrate at temperature and rate required by manufacturer and install fabric-backed membrane roofing. Do not apply to splice area of membrane roofing.
- F. In addition to adhering, mechanically fasten membrane roofing securely at terminations, penetrations, and perimeters.
- G. Apply membrane roofing with side laps shingled with slope of roof deck where possible.
- H. Adhesive Seam Installation: Clean both faces of splice areas, apply splicing cement, and firmly roll side and end laps of overlapping membrane roofing according to manufacturer's written instructions to ensure a watertight seam installation. Apply lap sealant and seal exposed edges of membrane roofing terminations.
 - 1. Apply a continuous bead of in-seam sealant before closing splice if required by membrane roofing system manufacturer.
- I. Tape Seam Installation: Clean and prime both faces of splice areas, apply splice tape, and firmly roll side and end laps of overlapping membrane roofing according to manufacturer's written instructions to ensure a watertight seam installation. Apply lap sealant and seal exposed edges of membrane roofing terminations.
- J. Repair tears, voids, and lapped seams in roofing that does not comply with requirements.
- K. Spread sealant or mastic bed over deck drain flange at roof drains and securely seal membrane roofing in place with clamping ring.

3.6 MECHANICALLY FASTENED MEMBRANE ROOFING INSTALLATION

- A. Mechanically fasten membrane roofing over area to receive roofing according to roofing system manufacturer's written instructions. Unroll membrane roofing and allow to relax before installing.
 - 1. For in-splice attachment, install membrane roofing with long dimension perpendicular to steel roof deck flutes.
- B. Start installation of membrane roofing in presence of roofing system manufacturer's technical personnel.
- C. Accurately align membrane roofing and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.
- D. Mechanically fasten or adhere membrane roofing securely at terminations, penetrations, and perimeter of roofing.
- E. Apply membrane roofing with side laps shingled with slope of roof deck where possible.

- F. Adhesive Seam Installation: Clean both faces of splice areas, apply splicing cement, and firmly roll side and end laps of overlapping membrane roofing according to manufacturer's written instructions to ensure a watertight seam installation. Apply lap sealant and seal exposed edges of membrane roofing terminations.
- G. Repair tears, voids, and lapped seams in roofing that does not comply with requirements.
- H. Spread sealant or mastic bed over deck drain flange at roof drains and securely seal membrane roofing in place with clamping ring.
- I. Through-Membrane Attachment: Secure membrane roofing using fastening plates or metal battens and mechanically fasten membrane roofing to roof deck. Cover battens and fasteners with a continuous cover strip.

3.7 BASE FLASHING INSTALLATION

- A. Install sheet flashings and preformed flashing accessories and adhere to substrates according to membrane roofing system manufacturer's written instructions.
- B. Apply bonding adhesive to substrate and underside of sheet flashing at required rate and allow to partially dry. Do not apply to seam area of flashing.
- C. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing.
- D. Clean splice areas, apply splicing cement, and firmly roll side and end laps of overlapping sheets to ensure a watertight seam installation. Apply lap sealant and seal exposed edges of sheet flashing terminations.
- E. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.

3.8 WALKWAY INSTALLATION

- A. Flexible Walkways: Install walkway products in locations indicated. Adhere walkway products to substrate with compatible adhesive according to roofing system manufacturer's written instructions.

3.9 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified independent testing agency to perform inspections.
- B. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion.
- C. Repair or remove and replace components of membrane roofing system where inspections indicate that they do not comply with specified requirements.

- D. Additional inspections, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.10 PROTECTING AND CLEANING

- A. Protect membrane roofing system from damage and wear during remainder of construction period. When remaining construction will not affect or endanger roofing, inspect roofing for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.
- B. Correct deficiencies in or remove membrane roofing system that does not comply with requirements, repair substrates and repair or reinstall membrane roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.
- C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

3.11 ROOFING INSTALLER'S WARRANTY

- A. WHEREAS <Insert name> of <Insert address>, herein called the "Roofing Installer," has performed roofing and associated work ("work") on the following project:
 - 1. Owner: <Insert name of Owner.>
 - 2. Address: <Insert address.>
 - 3. Building Name/Type: <Insert information.>
 - 4. Address: <Insert address.>
 - 5. Area of Work: <Insert information.>
 - 6. Acceptance Date: <Insert date.>
 - 7. Warranty Period: <Insert time.>
 - 8. Expiration Date: <Insert date.>
- B. AND WHEREAS Roofing Installer has contracted (either directly with Owner or indirectly as a subcontractor) to warrant said work against leaks and faulty or defective materials and workmanship for designated Warranty Period,
- C. NOW THEREFORE Roofing Installer hereby warrants, subject to terms and conditions herein set forth, that during Warranty Period he will, at his own cost and expense, make or cause to be made such repairs to or replacements of said work as are necessary to correct faulty and defective work and as are necessary to maintain said work in a watertight condition.
- D. This Warranty is made subject to the following terms and conditions:
 - 1. Specifically excluded from this Warranty are damages to work and other parts of the building, and to building contents, caused by:
 - a. Lightning;
 - b. Peak gust wind speed;
 - c. Fire;

- d. Failure of roofing system substrate, including cracking, settlement, excessive deflection, deterioration, and decomposition;
 - e. Faulty construction of parapet walls, copings, chimneys, skylights, vents, equipment supports, and other edge conditions and penetrations of the work;
 - f. Vapor condensation on bottom of roofing; and
 - g. Activity on roofing by others, including construction contractors, maintenance personnel, other persons, and animals, whether authorized or unauthorized by Owner.
2. When work has been damaged by any of foregoing causes, Warranty shall be null and void until such damage has been repaired by Roofing Installer and until cost and expense thereof have been paid by Owner or by another responsible party so designated.
 3. Roofing Installer is responsible for damage to work covered by this Warranty but is not liable for consequential damages to building or building contents resulting from leaks or faults or defects of work.
 4. During Warranty Period, if Owner allows alteration of work by anyone other than Roofing Installer, including cutting, patching, and maintenance in connection with penetrations, attachment of other work, and positioning of anything on roof, this Warranty shall become null and void on date of said alterations, but only to the extent said alterations affect work covered by this Warranty. If Owner engages Roofing Installer to perform said alterations, Warranty shall not become null and void unless Roofing Installer, before starting said work, shall have notified Owner in writing, showing reasonable cause for claim, that said alterations would likely damage or deteriorate work, thereby reasonably justifying a limitation or termination of this Warranty.
 5. During Warranty Period, if original use of roof is changed and it becomes used for, but was not originally specified for, a promenade, work deck, spray-cooled surface, flooded basin, or other use or service more severe than originally specified, this Warranty shall become null and void on date of said change, but only to the extent said change affects work covered by this Warranty.
 6. Owner shall promptly notify Roofing Installer of observed, known, or suspected leaks, defects, or deterioration and shall afford reasonable opportunity for Roofing Installer to inspect work and to examine evidence of such leaks, defects, or deterioration.
 7. This Warranty is recognized to be the only warranty of Roofing Installer on said work and shall not operate to restrict or cut off Owner from other remedies and resources lawfully available to Owner in cases of roofing failure. Specifically, this Warranty shall not operate to relieve Roofing Installer of responsibility for performance of original work according to requirements of the Contract Documents, regardless of whether Contract was a contract directly with Owner or a subcontract with Owner's General Contractor.
- E. IN WITNESS THEREOF, this instrument has been duly executed this **<Insert day>** day of **<Insert month>**, **<Insert year>**.
1. Authorized Signature: **<Insert signature>**.
 2. Name: **<Insert name>**.
 3. Title: **<Insert title>**.

END OF SECTION 075323

SECTION 075323 – EPDM ROOFING – SUPPLEMENTAL BID #1 (90 MIL.)

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Adhered EPDM membrane roofing system.
2. Mechanically fastened EPDM membrane roofing system.
3. Vapor retarder.
4. Roof insulation.

B. Related Sections:

1. Section 035113 "Cementitious Wood Fiber Decks" for roof decking replacement.
2. Section 061053 "Miscellaneous Rough Carpentry" for wood nailers, curbs, and blocking.
3. Section 070150.19 "Preparation for Re-Roofing" for recover board beneath new membrane roofing.
4. Section 076200 "Sheet Metal Flashing and Trim" for metal roof penetration flashings, flashings, and counterflashings.
5. Section 079200 "Joint Sealants" for joint sealants, joint fillers, and joint preparation.
6. Section 221423 "Storm Drainage Piping Specialties" for roof drains.

1.3 DEFINITIONS

- A. Roofing Terminology: See ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" for definitions of terms related to roofing work in this Section.

1.4 PERFORMANCE REQUIREMENTS

- A. General Performance: Installed membrane roofing and base flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Membrane roofing and base flashings shall remain watertight.
- B. Material Compatibility: Provide roofing materials that are compatible with one another under conditions of service and application required, as demonstrated by membrane roofing manufacturer based on testing and field experience.

- C. Roofing System Design: Provide membrane roofing system that is designed per FM Global Property Loss Prevention Data Sheets 1-28, Wind Design, and 1-29, Roof Deck Securement and Above Deck Roof Components.
 - 1. Upper roofs (41 feet high)
 - a. Field of roof: 49.2 psf.
 - b. 10' wide perimeters: 74.6 psf.
 - c. Corners (10' by 10'): 106.4 psf.
 - 2. Lower roofs (25 feet high)
 - a. Field of roof: 44.4 psf.
 - b. 4' wide perimeters: 67.3 psf.
 - c. Corners (4' by 4'): 95.9 psf.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For roofing system. Include plans, elevations, sections, details, and attachments to other work.
 - 1. Base flashings and membrane terminations.
 - 2. Tapered insulation, including slopes.
 - 3. Roof plan showing orientation of steel roof deck and orientation of membrane roofing and fastening spacings and patterns for mechanically fastened membrane roofing.
 - 4. Insulation fastening patterns for corner, perimeter, and field-of-roof locations.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified Installer and manufacturer.
- B. Manufacturer Certificate: Signed by roofing manufacturer certifying that membrane roofing system complies with requirements specified in "Performance Requirements" Article.
 - 1. Submit evidence of complying with performance requirements.
- C. Product Test Reports: Based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified testing agency, for components of membrane roofing system.
- D. Research/Evaluation Reports: For components of membrane roofing system, from the ICC-ES.
- E. Warranties: Sample of special warranties.

1.7 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For membrane roofing system to include in maintenance manuals.

1.8 QUALITY ASSURANCE

- A. **Manufacturer Qualifications:** A qualified manufacturer that is UL listed for membrane roofing system identical to that used for this Project.
- B. **Installer Qualifications:** A qualified firm that is approved, authorized, or licensed by membrane roofing system manufacturer to install manufacturer's product and that is eligible to receive manufacturer's special warranty.
- C. **Source Limitations:** Obtain components including roof insulation, fasteners, for membrane roofing system from same manufacturer as membrane roofing or approved by membrane roofing manufacturer.
- D. **Exterior Fire-Test Exposure:** ASTM E 108, Class A; for application and roof slopes indicated, as determined by testing identical membrane roofing materials by a qualified testing agency. Materials shall be identified with appropriate markings of applicable testing agency.
- E. **Fire-Resistance Ratings:** Where indicated, provide fire-resistance-rated roof assemblies identical to those of assemblies tested for fire resistance per ASTM E 119 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
- F. **Preinstallation Roofing Conference:** Conduct conference at Project site.
 - 1. Meet with Owner, Architect, Owner's insurer if applicable, testing and inspecting agency representative, roofing Installer, roofing system manufacturer's representative, deck Installer, and installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.
 - 2. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
 - 3. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - 4. Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening.
 - 5. Review structural loading limitations of roof deck during and after roofing.
 - 6. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect roofing system.
 - 7. Review governing regulations and requirements for insurance and certificates if applicable.
 - 8. Review temporary protection requirements for roofing system during and after installation.
 - 9. Review roof observation and repair procedures after roofing installation.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, approval or listing agency markings, and directions for storing and mixing with other components.

- B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.
 - 1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.
- C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.
- D. Handle and store roofing materials and place equipment in a manner to avoid permanent deflection of deck.

1.10 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.

1.11 WARRANTY

- A. Special Warranty: Manufacturer's standard or customized form, without monetary limitation, in which manufacturer agrees to repair or replace components of membrane roofing system that fail in materials or workmanship within specified warranty period.
 - 1. Special warranty includes membrane roofing, base flashings, roof insulation, fasteners, cover boards, roofing accessories, and other components of membrane roofing system.
 - 2. Warranty Period: 30 years from date of Substantial Completion.
- B. Special Project Warranty: Submit roofing Installer's warranty, on warranty form at end of this Section, signed by Installer, covering Work of this Section, including all components of membrane roofing system such as membrane roofing, base flashing, roof insulation, fasteners, cover boards, substrate boards, vapor retarders, roof pavers, and walkway products, for the following warranty period:
 - 1. Warranty Period: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 EPDM MEMBRANE ROOFING

- A. EPDM: ASTM D 4637, Type I, non-reinforced, uniform, flexible EPDM sheet.
 - 1. Thickness: 90 mils, nominal.
 - 2. Exposed Face Color: Black.
- B. Manufacturers: Subject to compliance with requirements and RoofNav Assemblies, provide products by one of the following:
 - 1. Firestone Building Products, RubberGard Platinum

2. GenFlex Roofing Systems, AFR EPDM 90 mil
3. ProLink Roofing Systems, GK-090
4. Roofing Products International, Royal Edge LS-FR EPDM

2.2 PERFORMANCE REQUIREMENTS

- A. General Performance: Installed roofing and base flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Roofing and base flashings shall remain watertight.
- B. FM Global Listing: Roofing, base flashings, and component materials shall be listed in FM Global's "RoofNav" for Class 1 or noncombustible construction, as applicable. Identify materials with FM Global markings.
 1. Upper roofs (41 feet high):
 - a. Minimum safety factor: 2.0.
 - 1) Field of roof: Class 1-105.
 - 2) 10' wide perimeters: Class 1-150.
 - 3) Corners (10' by 10'): Class 1-225.
 2. Lower roofs (25 feet high)
 - a. Minimum safety factor: 2.0.
 - 1) Field of roof: Class 1-90.
 - 2) 4' wide perimeters: Class 1-135.
 - 3) Corners (4' by 4'): Class 1-195.

2.3 AUXILIARY MEMBRANE ROOFING MATERIALS

- A. General: Auxiliary membrane roofing materials recommended by roofing system manufacturer for intended use and compatible with membrane roofing.
 1. Liquid-type auxiliary materials shall comply with VOC limits of authorities having jurisdiction.
 2. Adhesives and sealants that are not on the exterior side of weather barrier shall comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
 - a. Plastic Foam Adhesives: 50 g/L.
 - b. Gypsum Board and Panel Adhesives: 50 g/L.
 - c. Multipurpose Construction Adhesives: 70 g/L.
 - d. Fiberglass Adhesives: 80 g/L.
 - e. Single-Ply Roof Membrane Adhesives: 250 g/L.
 - f. Single-Ply Roof Membrane Sealants: 450 g/L.
 - g. Nonmembrane Roof Sealants: 300 g/L.
 - h. Sealant Primers for Nonporous Substrates: 250 g/L.
 - i. Sealant Primers for Porous Substrates: 775 g/L.
 - j. Other Adhesives and Sealants: 250 g/L.
- B. Sheet Flashing: 60-mil-thick EPDM, partially cured or cured, according to application.

- C. Bonding Adhesive: Manufacturer's standard, water based.
- D. Seaming Material: Single-component, butyl splicing adhesive and splice cleaner.
- E. Lap Sealant: Manufacturer's standard, single-component sealant, colored to match membrane roofing.
- F. Water Cutoff Mastic: Manufacturer's standard butyl mastic sealant.
- G. Metal Termination Bars: Manufacturer's standard, predrilled stainless-steel or aluminum bars, approximately 1 by 1/8 inch thick; with anchors.
- H. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening membrane to substrate, and acceptable to roofing system manufacturer.
- I. Coating: AcryliTop PC-100, Firestone Building Products.
- J. Miscellaneous Accessories: Provide pourable sealers, preformed cone and vent sheet flashings, preformed inside and outside corner sheet flashings, reinforced EPDM securement strips, T-joint covers, in-seam sealants, termination reglets, cover strips, and other accessories.

2.4 VAPOR RETARDER

- A. Polyethylene Film: ASTM D 4397, 6 mils thick, minimum, with maximum permeance rating of 0.13 perm.
 - 1. Tape: Pressure-sensitive tape of type recommended by vapor-retarder manufacturer for sealing joints and penetrations in vapor retarder.
 - 2. Adhesive: Manufacturer's standard lap adhesive, FM Approvals approved for vapor-retarder application.

2.5 ROOF INSULATION

- A. General: Preformed roof insulation boards manufactured or approved by EPDM membrane roofing manufacturer, selected from manufacturer's standard sizes suitable for application, of thicknesses indicated and that produce FM Approvals-approved roof insulation.
- B. Polyisocyanurate Board Insulation: ASTM C 1289, Type II, Class I, Grade 3, felt or glass-fiber mat facer on both major surfaces.
- C. Composite Polyisocyanurate Board Insulation: ASTM C 1289, Type II, Class 1, Grade 2 with factory-applied facing board on one major surface, as indicated below by type, and felt or glass-fiber mat facer on the other.
- D. Tapered Insulation: Provide factory-tapered insulation boards fabricated to slope of 1/4 inch per 12 inches unless otherwise indicated.

- E. Provide preformed saddles, crickets, tapered edge strips, and other insulation shapes where indicated for sloping to drain. Fabricate to slopes indicated.

2.6 INSULATION ACCESSORIES

- A. General: Furnish roof insulation accessories recommended by insulation manufacturer for intended use and compatibility with membrane roofing.
- B. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening roof insulation and cover boards to substrate, and acceptable to roofing system manufacturer.
- C. Modified Asphaltic Insulation Adhesive: Insulation manufacturer's recommended modified asphalt, asbestos-free, cold-applied adhesive formulated to attach roof insulation to substrate or to another insulation layer.
- D. Full-Spread Applied Insulation Adhesive: Insulation manufacturer's recommended spray-applied, low-rise, two-component urethane adhesive formulated to attach roof insulation to substrate or to another insulation layer.
- E. Cover Board: As per Section 070150.19 "Preparation for Re-Roofing".

2.7 ASPHALT MATERIALS

- A. Roofing Asphalt: ASTM D 312, Type III or Type IV.

2.8 WALKWAYS

- A. Flexible Walkways: Factory-formed, nonporous, heavy-duty, solid-rubber, slip-resisting, surface-textured walkway pads or rolls, approximately 3/16 inch thick, and acceptable to membrane roofing system manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with the following requirements and other conditions affecting performance of roofing system:
 - 1. Verify that roof openings and penetrations are in place and curbs are set and braced and that roof drain bodies are securely clamped in place.
 - 2. Verify that wood blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation.
 - 3. Verify that surface plane flatness and fastening of steel roof deck complies with requirements in Section 053100 "Steel Decking."

4. Verify that minimum concrete drying period recommended by roofing system manufacturer has passed.
5. Verify that concrete substrate is visibly dry and free of moisture. Test for capillary moisture by plastic sheet method according to ASTM D 4263.
6. Verify that concrete curing compounds that will impair adhesion of roofing components to roof deck have been removed.

- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing installation according to roofing system manufacturer's written instructions. Remove sharp projections.
- B. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast.
- C. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at the end of the workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.
- D. Install acoustical roof deck rib insulation strips immediately before installation of overlying construction and to remain dry.

3.3 VAPOR-RETARDER INSTALLATION

- A. Polyethylene Film: Loosely lay polyethylene-film vapor retarder in a single layer over area to receive vapor retarder, side and end lapping each sheet a minimum of 2 inches and 6 inches, respectively.
 1. Continuously seal side and end laps with tape.
- B. Completely seal vapor retarder at terminations, obstructions, and penetrations to prevent air movement into membrane roofing system.

3.4 INSULATION INSTALLATION

- A. Coordinate installing membrane roofing system components so insulation is not exposed to precipitation or left exposed at the end of the workday.
- B. Comply with membrane roofing system and insulation manufacturer's written instructions for installing roof insulation.
- C. Install tapered insulation under area of roofing to conform to slopes indicated.

- D. Install insulation under area of roofing to achieve required thickness. Where overall insulation thickness is 2.7 inches or greater, install two or more layers with joints of each succeeding layer staggered from joints of previous layer a minimum of 6 inches in each direction.
 - 1. Where installing composite and noncomposite insulation in two or more layers, install noncomposite board insulation for bottom layer and intermediate layers, if applicable, and install composite board insulation for top layer.
- E. Trim surface of insulation where necessary at roof drains so completed surface is flush and does not restrict flow of water.
- F. Install insulation with long joints of insulation in a continuous straight line with end joints staggered between rows, abutting edges and ends between boards. Fill gaps exceeding 1/4 inch with insulation.
 - 1. Cut and fit insulation within 1/4 inch of nailers, projections, and penetrations.
- G. Adhered Insulation: Install each layer of insulation and adhere to substrate as follows:
 - 1. Set each layer of insulation in a uniform coverage of full-spread insulation adhesive, firmly pressing and maintaining insulation in place.
- H. Mechanically Fastened and Adhered Insulation: Install first layer of insulation to deck using mechanical fasteners specifically designed and sized for fastening specified board-type roof insulation to deck type.
 - 1. Fasten insulation according to requirements in FM Global's "RoofNav" for specified Windstorm Resistance Classification.
 - 2. Fasten insulation to resist uplift pressure at corners, perimeter, and field of roof.
- I. Install cover boards over insulation with long joints in continuous straight lines with end joints staggered between rows. Offset joints of insulation below a minimum of 6 inches in each direction. Loosely butt cover boards together and fasten to roof deck.
 - 1. Fasten cover boards according to requirements in FM Global's "RoofNav" for specified Windstorm Resistance Classification.
 - 2. Fasten cover boards to resist uplift pressure at corners, perimeter, and field of roof.

3.5 ADHERED MEMBRANE ROOFING INSTALLATION

- A. Adhere membrane roofing over area to receive roofing according to membrane roofing system manufacturer's written instructions. Unroll membrane roofing and allow to relax before installing.
- B. Start installation of membrane roofing in presence of membrane roofing system manufacturer's technical personnel.
- C. Accurately align membrane roofing and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.

- D. Bonding Adhesive: Apply to substrate and underside of membrane roofing at rate required by manufacturer and allow to partially dry before installing membrane roofing. Do not apply to splice area of membrane roofing.
- E. Hot Roofing Asphalt: Apply a solid mopping of hot roofing asphalt to substrate at temperature and rate required by manufacturer and install fabric-backed membrane roofing. Do not apply to splice area of membrane roofing.
- F. In addition to adhering, mechanically fasten membrane roofing securely at terminations, penetrations, and perimeters.
- G. Apply membrane roofing with side laps shingled with slope of roof deck where possible.
- H. Adhesive Seam Installation: Clean both faces of splice areas, apply splicing cement, and firmly roll side and end laps of overlapping membrane roofing according to manufacturer's written instructions to ensure a watertight seam installation. Apply lap sealant and seal exposed edges of membrane roofing terminations.
 - 1. Apply a continuous bead of in-seam sealant before closing splice if required by membrane roofing system manufacturer.
- I. Tape Seam Installation: Clean and prime both faces of splice areas, apply splice tape, and firmly roll side and end laps of overlapping membrane roofing according to manufacturer's written instructions to ensure a watertight seam installation. Apply lap sealant and seal exposed edges of membrane roofing terminations.
- J. Repair tears, voids, and lapped seams in roofing that does not comply with requirements.
- K. Spread sealant or mastic bed over deck drain flange at roof drains and securely seal membrane roofing in place with clamping ring.

3.6 MECHANICALLY FASTENED MEMBRANE ROOFING INSTALLATION

- A. Mechanically fasten membrane roofing over area to receive roofing according to roofing system manufacturer's written instructions. Unroll membrane roofing and allow to relax before installing.
 - 1. For in-splice attachment, install membrane roofing with long dimension perpendicular to steel roof deck flutes.
- B. Start installation of membrane roofing in presence of roofing system manufacturer's technical personnel.
- C. Accurately align membrane roofing and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.
- D. Mechanically fasten or adhere membrane roofing securely at terminations, penetrations, and perimeter of roofing.
- E. Apply membrane roofing with side laps shingled with slope of roof deck where possible.

- F. Adhesive Seam Installation: Clean both faces of splice areas, apply splicing cement, and firmly roll side and end laps of overlapping membrane roofing according to manufacturer's written instructions to ensure a watertight seam installation. Apply lap sealant and seal exposed edges of membrane roofing terminations.
- G. Repair tears, voids, and lapped seams in roofing that does not comply with requirements.
- H. Spread sealant or mastic bed over deck drain flange at roof drains and securely seal membrane roofing in place with clamping ring.
- I. Through-Membrane Attachment: Secure membrane roofing using fastening plates or metal battens and mechanically fasten membrane roofing to roof deck. Cover battens and fasteners with a continuous cover strip.

3.7 BASE FLASHING INSTALLATION

- A. Install sheet flashings and preformed flashing accessories and adhere to substrates according to membrane roofing system manufacturer's written instructions.
- B. Apply bonding adhesive to substrate and underside of sheet flashing at required rate and allow to partially dry. Do not apply to seam area of flashing.
- C. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing.
- D. Clean splice areas, apply splicing cement, and firmly roll side and end laps of overlapping sheets to ensure a watertight seam installation. Apply lap sealant and seal exposed edges of sheet flashing terminations.
- E. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.

3.8 WALKWAY INSTALLATION

- A. Flexible Walkways: Install walkway products in locations indicated. Adhere walkway products to substrate with compatible adhesive according to roofing system manufacturer's written instructions.

3.9 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified independent testing agency to perform inspections.
- B. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion.
- C. Repair or remove and replace components of membrane roofing system where inspections indicate that they do not comply with specified requirements.

- D. Additional inspections, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.10 PROTECTING AND CLEANING

- A. Protect membrane roofing system from damage and wear during remainder of construction period. When remaining construction will not affect or endanger roofing, inspect roofing for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.
- B. Correct deficiencies in or remove membrane roofing system that does not comply with requirements, repair substrates and repair or reinstall membrane roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.
- C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

3.11 ROOFING INSTALLER'S WARRANTY

- A. WHEREAS <Insert name> of <Insert address>, herein called the "Roofing Installer," has performed roofing and associated work ("work") on the following project:
 - 1. Owner: <Insert name of Owner.>
 - 2. Address: <Insert address.>
 - 3. Building Name/Type: <Insert information.>
 - 4. Address: <Insert address.>
 - 5. Area of Work: <Insert information.>
 - 6. Acceptance Date: <Insert date.>
 - 7. Warranty Period: <Insert time.>
 - 8. Expiration Date: <Insert date.>
- B. AND WHEREAS Roofing Installer has contracted (either directly with Owner or indirectly as a subcontractor) to warrant said work against leaks and faulty or defective materials and workmanship for designated Warranty Period,
- C. NOW THEREFORE Roofing Installer hereby warrants, subject to terms and conditions herein set forth, that during Warranty Period he will, at his own cost and expense, make or cause to be made such repairs to or replacements of said work as are necessary to correct faulty and defective work and as are necessary to maintain said work in a watertight condition.
- D. This Warranty is made subject to the following terms and conditions:
 - 1. Specifically excluded from this Warranty are damages to work and other parts of the building, and to building contents, caused by:
 - a. Lightning;
 - b. Peak gust wind speed;
 - c. Fire;

- d. Failure of roofing system substrate, including cracking, settlement, excessive deflection, deterioration, and decomposition;
 - e. Faulty construction of parapet walls, copings, chimneys, skylights, vents, equipment supports, and other edge conditions and penetrations of the work;
 - f. Vapor condensation on bottom of roofing; and
 - g. Activity on roofing by others, including construction contractors, maintenance personnel, other persons, and animals, whether authorized or unauthorized by Owner.
2. When work has been damaged by any of foregoing causes, Warranty shall be null and void until such damage has been repaired by Roofing Installer and until cost and expense thereof have been paid by Owner or by another responsible party so designated.
 3. Roofing Installer is responsible for damage to work covered by this Warranty but is not liable for consequential damages to building or building contents resulting from leaks or faults or defects of work.
 4. During Warranty Period, if Owner allows alteration of work by anyone other than Roofing Installer, including cutting, patching, and maintenance in connection with penetrations, attachment of other work, and positioning of anything on roof, this Warranty shall become null and void on date of said alterations, but only to the extent said alterations affect work covered by this Warranty. If Owner engages Roofing Installer to perform said alterations, Warranty shall not become null and void unless Roofing Installer, before starting said work, shall have notified Owner in writing, showing reasonable cause for claim, that said alterations would likely damage or deteriorate work, thereby reasonably justifying a limitation or termination of this Warranty.
 5. During Warranty Period, if original use of roof is changed and it becomes used for, but was not originally specified for, a promenade, work deck, spray-cooled surface, flooded basin, or other use or service more severe than originally specified, this Warranty shall become null and void on date of said change, but only to the extent said change affects work covered by this Warranty.
 6. Owner shall promptly notify Roofing Installer of observed, known, or suspected leaks, defects, or deterioration and shall afford reasonable opportunity for Roofing Installer to inspect work and to examine evidence of such leaks, defects, or deterioration.
 7. This Warranty is recognized to be the only warranty of Roofing Installer on said work and shall not operate to restrict or cut off Owner from other remedies and resources lawfully available to Owner in cases of roofing failure. Specifically, this Warranty shall not operate to relieve Roofing Installer of responsibility for performance of original work according to requirements of the Contract Documents, regardless of whether Contract was a contract directly with Owner or a subcontract with Owner's General Contractor.
- E. IN WITNESS THEREOF, this instrument has been duly executed this **<Insert day>** day of **<Insert month>**, **<Insert year>**.
1. Authorized Signature: **<Insert signature>**.
 2. Name: **<Insert name>**.
 3. Title: **<Insert title>**.

END OF SECTION 075323

SECTION 076200 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:

- 1. Formed low-slope roof sheet metal fabrications.

- B. Related Requirements:

- 1. Section 061053 "Miscellaneous Rough Carpentry" for wood nailers, curbs, and blocking.
 - 2. Section 075323 "EPDM Roofing" for materials and installation of sheet metal flashing and trim integral with roofing.
 - 3. Section 077100 "Roof Specialties" for roof-edge specialties, roof-edge drainage, reglets and counterflashings systems.
 - 4. Section 077200 "Roof Accessories" for set-on-type curbs, equipment supports, roof hatches, vents, and other manufactured roof accessory units.

1.3 COORDINATION

- A. Coordinate sheet metal flashing and trim layout and seams with sizes and locations of penetrations to be flashed, and joints and seams in adjacent materials.
- B. Coordinate sheet metal flashing and trim installation with adjoining roofing and wall materials, joints, and seams to provide leakproof, secure, and noncorrosive installation.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.

- 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each manufactured product and accessory.

- B. Shop Drawings: For sheet metal flashing and trim.

- 1. Include plans, elevations, sections, and attachment details.
 - 2. Detail fabrication and installation layouts, expansion-joint locations, and keyed details. Distinguish between shop- and field-assembled work.

3. Include identification of material, thickness, weight, and finish for each item and location in Project.
4. Include details for forming, including profiles, shapes, seams, and dimensions.
5. Include details for joining, supporting, and securing, including layout and spacing of fasteners, cleats, clips, and other attachments. Include pattern of seams.
6. Include details of termination points and assemblies.
7. Include details of expansion joints and expansion-joint covers, including showing direction of expansion and contraction from fixed points.
8. Include details of roof-penetration flashing.
9. Include details of edge conditions, including eaves, ridges, valleys, rakes, crickets, and counterflashings as applicable.
10. Include details of special conditions.
11. Include details of connections to adjoining work.

C. Installation Data: per FM Global Property Loss Prevention

- a. Submit technical data sheets to show compliance with installation requirements of FM Global Property Loss Prevention Data Sheet 1-49, Perimeter Flashing.
- b. Include information on the type of fasteners used, fastening rates, and drawings.
- c. Contractor to provide data to FM Global for review; copy Architect.

D. Samples for Verification: For each type of exposed finish.

1. Sheet Metal Flashing: 12 inches long by actual width of unit, including finished seam and in required profile. Include fasteners, cleats, clips, closures, and other attachments.
2. Trim, Metal Closures, Expansion Joints, Joint Intersections, and Miscellaneous Fabrications: 12 inches long and in required profile. Include fasteners and other exposed accessories.

1.5 INFORMATIONAL SUBMITTALS

- A. Product Certificates: For each type of coping and roof edge flashing that is SPRI ES-1 tested and FM Approvals approved.
- B. Sample Warranty: For special warranty.

1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For sheet metal flashing and trim, and its accessories, to include in maintenance manuals.

1.7 QUALITY ASSURANCE

- A. Fabricator Qualifications: Employs skilled workers who custom fabricate sheet metal flashing and trim similar to that required for this Project and whose products have a record of successful in-service performance.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage. Store sheet metal flashing and trim materials away from uncured concrete and masonry.
- B. Protect strippable protective covering on sheet metal flashing and trim from exposure to sunlight and high humidity, except to extent necessary for period of sheet metal flashing and trim installation.

1.9 WARRANTY

- A. Special Warranty on Finishes: Manufacturer agrees to repair finish or replace sheet metal flashing and trim that shows evidence of deterioration of factory-applied finishes within specified warranty period.

- 1. Finish Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. General: Sheet metal flashing and trim assemblies shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Completed sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight.
- B. Sheet Metal Standard for Flashing and Trim: Comply with NRCA's "The NRCA Roofing Manual" and SMACNA's "Architectural Sheet Metal Manual" requirements for dimensions and profiles shown unless more stringent requirements are indicated.
- C. Sheet Metal Standard for Copper: Comply with CDA's "Copper in Architecture Handbook." Conform to dimensions and profiles shown unless more stringent requirements are indicated.
- D. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

- 1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

2.2 SHEET METALS

- A. General: Protect mechanical and other finishes on exposed surfaces from damage by applying strippable, temporary protective film before shipping.
- B. Copper Sheet: ASTM B 370, cold-rolled copper sheet, H00 or H01 temper.

- 1. Nonpatinated Exposed Finish: Mill.

- C. Aluminum Sheet: ASTM B 209, alloy as standard with manufacturer for finish required, with temper as required to suit forming operations and performance required; with smooth, flat surface.
1. As-Milled Finish: Mill.
 2. Color: As selected by Architect from manufacturer's full range.
 3. Concealed Finish: Pretreat with manufacturer's standard white or light-colored acrylic or polyester backer finish, consisting of prime coat and wash coat with minimum total dry film thickness of 0.5 mil.
 - a. Two-Coat Fluoropolymer: AAMA 621. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
 4. Color: As selected by Architect from manufacturer's full range.
 5. Concealed Finish: Pretreat with manufacturer's standard white or light-colored acrylic or polyester backer finish, consisting of prime coat and wash coat with minimum total dry film thickness of 0.5 mil.

2.3 UNDERLAYMENT MATERIALS

- A. Felt: ASTM D 226/D 226M, Type II (No. 30), asphalt-saturated organic felt; nonperforated.

2.4 MISCELLANEOUS MATERIALS

- A. General: Provide materials and types of fasteners, solder, protective coatings, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation and as recommended by manufacturer of primary sheet metal or manufactured item unless otherwise indicated.
- B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads and recommended by manufacturer of primary sheet metal or manufactured item.
1. General: Blind fasteners or self-drilling screws, gasketed, with hex-washer head.
 - a. Exposed Fasteners: Heads matching color of sheet metal using plastic caps or factory-applied coating. Provide metal-backed EPDM or PVC sealing washers under heads of exposed fasteners bearing on weather side of metal.
 - b. Blind Fasteners: High-strength aluminum or stainless-steel rivets suitable for metal being fastened.
 - c. Spikes and Ferrules: Same material as gutter; with spike with ferrule matching internal gutter width.
 2. Fasteners for Copper Sheet: Copper, hardware bronze or passivated Series 300 stainless steel.
 3. Fasteners for Aluminum Sheet: Aluminum or Series 300 stainless steel.
- C. Solder:

1. For Copper: ASTM B 32,.
- D. Sealant Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2 inchwide and 1/8 inchthick.
- E. Elastomeric Sealant: ASTM C 920, elastomeric polyurethane polymer sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.
- F. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type expansion joints with limited movement.
- G. Epoxy Seam Sealer: Two-part, noncorrosive, aluminum seam-cementing compound, recommended by aluminum manufacturer for exterior nonmoving joints, including riveted joints.
- H. Bituminous Coating: Cold-applied asphalt emulsion according to ASTM D 1187.
- I. Asphalt Roofing Cement: ASTM D 4586, asbestos free, of consistency required for application.

2.5 FABRICATION, GENERAL

- A. General: Custom fabricate sheet metal flashing and trim to comply with details shown and recommendations in cited sheet metal standard that apply to design, dimensions, geometry, metal thickness, and other characteristics of item required. Fabricate sheet metal flashing and trim in shop to greatest extent possible.
 1. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.
 2. Obtain field measurements for accurate fit before shop fabrication.
 3. Form sheet metal flashing and trim to fit substrates without excessive oil canning, buckling, and tool marks; true to line, levels, and slopes; and with exposed edges folded back to form hems.
 4. Conceal fasteners and expansion provisions where possible. Do not use exposed fasteners on faces exposed to view.
- B. Fabrication Tolerances: Fabricate sheet metal flashing and trim that is capable of installation to a tolerance of 1/4 inch in 20 feeton slope and location lines indicated on Drawings and within 1/8-inchoffset of adjoining faces and of alignment of matching profiles.
- C. Fabrication Tolerances: Fabricate sheet metal flashing and trim that is capable of installation to tolerances specified in MCA's "Guide Specification for Residential Metal Roofing."
- D. Expansion Provisions: Form metal for thermal expansion of exposed flashing and trim.
 1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with butyl sealant concealed within joints.

- 2. Use lapped expansion joints only where indicated on Drawings.
- E. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.
- F. Fabricate cleats and attachment devices of sizes as recommended by cited sheet metal standard for application, but not less than thickness of metal being secured.
- G. Seams: Fabricate nonmoving seams with flat-lock seams. Tin edges to be seamed, form seams, and solder.
- H. Do not use graphite pencils to mark metal surfaces.

2.6 LOW-SLOPE ROOF SHEET METAL FABRICATIONS

- A. Base Flashing: Shop fabricate interior and exterior corners. Fabricate from the following materials:
 - 1. Aluminum: 0.040 inch thick.
- B. Roof-Penetration Flashing: Fabricate from the following materials:
 - 1. Copper: 16 oz./sq. ft.
 - 2.
- C. Roof-Drain Flashing: Fabricate from the following materials:
 - 1. Copper: 12 oz./sq. ft.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, substrate, and other conditions affecting performance of the Work.
 - 1. Verify compliance with requirements for installation tolerances of substrates.
 - 2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
 - 3. Verify that air- or water-resistant barriers have been installed over sheathing or backing substrate to prevent air infiltration or water penetration.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 UNDERLAYMENT INSTALLATION

- A. Felt Underlayment: Install felt underlayment, wrinkle free, using adhesive to minimize use of mechanical fasteners under sheet metal flashing and trim. Apply in shingle fashion to shed water, with lapped joints of not less than 2 inches.

3.3 INSTALLATION, GENERAL

- A. General: Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement. Use fasteners, solder, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.
1. Securely attach sheet metal flashing and trim to carpentry by anchoring and fastening as indicated, complying with FM Global Property Loss Prevention Data Sheet 1-49, Perimeter Flashing.
 2. Install sheet metal flashing and trim true to line, levels, and slopes. Provide uniform, neat seams with minimum exposure of solder, welds, and sealant.
 3. Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
 4. Space cleats not more than 12 inches apart. Attach each cleat with at least two fasteners. Bend tabs over fasteners.
 5. Install exposed sheet metal flashing and trim with limited oil canning, and free of buckling and tool marks.
 6. Torch cutting of sheet metal flashing and trim is not permitted.
 7. Do not use graphite pencils to mark metal surfaces.
- B. Metal Protection: Where dissimilar metals contact each other, or where metal contacts pressure-treated wood or other corrosive substrates, protect against galvanic action or corrosion by painting contact surfaces with bituminous coating or by other permanent separation as recommended by sheet metal manufacturer or cited sheet metal standard.
1. Coat concealed side of uncoated-aluminum sheet metal flashing and trim with bituminous coating where flashing and trim contact wood, ferrous metal, or cementitious construction.
 2. Underlayment: Where installing sheet metal flashing and trim directly on cementitious or wood substrates, install underlayment and cover with slip sheet.
- C. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at maximum of 10 feet with no joints within 24 inches of corner or intersection.
1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with sealant concealed within joints.
 2. Use lapped expansion joints only where indicated on Drawings.
- D. Fasteners: Use fastener sizes that penetrate wood blocking or sheathing not less than 1-1/4 inches for nails and not less than 3/4 inch for wood screws.

- E. Conceal fasteners and expansion provisions where possible in exposed work and locate to minimize possibility of leakage. Cover and seal fasteners and anchors as required for a tight installation.
- F. Seal joints as required for watertight construction.
 - 1. Use sealant-filled joints unless otherwise indicated. Embed hooked flanges of joint members not less than 1 inch into sealant. Form joints to completely conceal sealant. When ambient temperature at time of installation is between 40 and 70 deg F, set joint members for 50 percent movement each way. Adjust setting proportionately for installation at higher ambient temperatures. Do not install sealant-type joints at temperatures below 40 deg F.
 - 2. Prepare joints and apply sealants to comply with requirements in Section 079200 "Joint Sealants."
- G. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pre-tin edges of sheets with solder to width of 1-1/2 inches; however, reduce pre-tinning where pre-tinned surface would show in completed Work.
 - 1. Do not solder metallic-coated steel and aluminum sheet.
 - 2. Do not use torches for soldering.
 - 3. Heat surfaces to receive solder, and flow solder into joint. Fill joint completely. Completely remove flux and spatter from exposed surfaces.
 - 4. Copper Soldering: Tin edges of uncoated sheets, using solder for copper.
- H. Rivets: Rivet joints in uncoated aluminum where necessary for strength.

3.4 ROOF FLASHING INSTALLATION

- A. General: Install sheet metal flashing and trim to comply with performance requirements and cited sheet metal standard. Provide concealed fasteners where possible, and set units true to line, levels, and slopes. Install work with laps, joints, and seams that are permanently watertight and weather resistant.
- B. Pipe or Post Counterflashing: Install counterflashing umbrella with close-fitting collar with top edge flared for elastomeric sealant, extending minimum of 4 inches over base flashing. Install stainless-steel draw band and tighten.
- C. Roof-Penetration Flashing: Coordinate installation of roof-penetration flashing with installation of roofing and other items penetrating roof. Seal with elastomeric sealant and clamp flashing to pipes that penetrate roof.

3.5 ERECTION TOLERANCES

- A. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerance of 1/4 inch in 20 feet on slope and location lines indicated on Drawings and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.

- B. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerances specified in MCA's "Guide Specification for Residential Metal Roofing."

3.6 CLEANING AND PROTECTION

- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
- B. Clean and neutralize flux materials. Clean off excess solder.
- C. Clean off excess sealants.
- D. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturer's written installation instructions. On completion of sheet metal flashing and trim installation, remove unused materials and clean finished surfaces as recommended by sheet metal flashing and trim manufacturer. Maintain sheet metal flashing and trim in clean condition during construction.
- E. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 076200

SECTION 077100 - ROOF SPECIALTIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

- 1. Roof-edge specialties.
- 2. Roof-edge drainage systems.
- 3. Reglets and counterflashings.

B. Related Requirements:

- 1. Section 061053 "Miscellaneous Rough Carpentry" for wood nailers, curbs, and blocking.
- 2. Section 076200 "Sheet Metal Flashing and Trim" for custom- and site-fabricated sheet metal flashing and trim.
- 3. Section 077200 "Roof Accessories" for set-on-type curbs, equipment supports, roof hatches, vents, and other manufactured roof accessory units.
- 4. Section 079200 "Joint Sealants" for field-applied sealants between roof specialties and adjacent materials.

C. Preinstallation Conference: Conduct conference at Project site.

- 1. Meet with Owner, Architect, Owner's insurer if applicable, roofing-system testing and inspecting agency representative, roofing Installer, roofing-system manufacturer's representative, Installer, structural-support Installer, and installers whose work interfaces with or affects roof specialties, including installers of roofing materials and accessories.
- 2. Examine substrate conditions for compliance with requirements, including flatness and attachment to structural members.
- 3. Review special roof details, roof drainage, and condition of other construction that will affect roof specialties.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

- 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.

B. Shop Drawings: For roof specialties.

1. Include plans, elevations, expansion-joint locations, keyed details, and attachments to other work. Distinguish between plant- and field-assembled work.
 2. Include details for expansion and contraction; locations of expansion joints, including direction of expansion and contraction.
 3. Indicate profile and pattern of seams and layout of fasteners, cleats, clips, and other attachments.
 4. Detail termination points and assemblies, including fixed points.
 5. Include details of special conditions.
- C. Samples for Initial Selection: For each type of roof specialty indicated with factory-applied color finishes.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For manufacturer.
- B. Product Certificates: For each type of roof specialty.
- C. Product Test Reports: For roof-edge flashings, for tests performed by a qualified testing agency.
- D. Installation Data: per FM Global Property Loss Prevention
- a. Submit technical data sheets to show compliance with installation requirements of FM Global Property Loss Prevention Data Sheet 1-49, Perimeter Flashing.
 - b. Include information on the type of fasteners used, fastening rates, and drawings.
 - c. Contractor to provide data to FM Global for review; copy Architect.
- E. Sample Warranty: For manufacturer's special warranty.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A qualified manufacturer offering products meeting requirements that are FM Approvals listed for specified class and SPRI ES-1 tested to specified design pressure.
- B. Source Limitations: Obtain roof specialties approved by manufacturer providing roofing-system warranty specified in Section 075323 - "EPDM Roofing".
- C. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and set quality standards for fabrication and installation.
1. Build mockup of typical roof edge as shown on Drawings.
 2. Build mockup of typical roof edge as part of Integrated Exterior Mockup specified in Section 014500 "Quality Control"
 3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
 4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Do not store roof specialties in contact with other materials that might cause staining, denting, or other surface damage. Store roof specialties away from uncured concrete and masonry.
- B. Protect strippable protective covering on roof specialties from exposure to sunlight and high humidity, except to extent necessary for the period of roof-specialty installation.

1.7 FIELD CONDITIONS

- A. Field Measurements: Verify profiles and tolerances of roof-specialty substrates by field measurements before fabrication, and indicate measurements on Shop Drawings.
- B. Coordination: Coordinate roof specialties with flashing, trim, and construction of parapets, roof deck, roof and wall panels, and other adjoining work to provide a leakproof, secure, and noncorrosive installation.

1.8 WARRANTY

- A. Roofing-System Warranty: Roof specialties are included in warranty provisions in Section 075323 - "EPDM Roofing"
- B. Special Warranty on Painted Finishes: Manufacturer agrees to repair finish or replace roof specialties that show evidence of deterioration of factory-applied finishes within specified warranty period.

- 1. Finish Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. General Performance: Roof specialties shall withstand exposure to weather and resist thermally induced movement without failure, rattling, leaking, or fastener disengagement due to defective manufacture, fabrication, installation, or other defects in construction.
- B. FM Approvals' Listing: Manufacture and install copings roof-edge specialties that are listed in FM Approvals' "RoofNav" and approved for windstorm classification, Class 1-75. Identify materials with FM Approvals' markings.
- C. SPRI Wind Design Standard: Manufacture and install copings roof-edge specialties tested according to SPRI ES-1 and capable of resisting the following design pressures:
 - 1. Design Pressure: As specified in Section 075323 - "EPDM Roofing".
- D. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, hole elongation, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Provide clips that

resist rotation and avoid shear stress as a result of thermal movements. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.

2.2 ROOF-EDGE SPECIALTIES

- A. Roof-Edge Fascia: Manufactured, two-piece, roof-edge fascia consisting of snap-on metal fascia cover in section lengths not exceeding 12 feet and a continuous metal receiver with integral drip-edge cleat to engage fascia cover and secure single-ply roof membrane. Provide matching corner units.

1. Formed Aluminum Sheet Fascia Covers: Aluminum sheet, 0.040 inch thick and thickness as required to meet performance requirements.
 - a. Surface: Smooth, flat finish.
 - b. Finish: Mill.
2. Corners: Factory mitered and soldered.
3. Splice Plates: Concealed, of same material, finish, and shape as fascia cover.
4. Receiver: Aluminum sheet, 0.050 inch thick.
5. Fascia Accessories: Fascia extenders with continuous hold-down cleats, Spill out scuppers.

2.3 REGLETS AND COUNTERFLASHINGS

- A. Reglets: Manufactured units formed to provide secure interlocking of separate reglet and counterflashing pieces, from the following exposed metal:

1. Formed Aluminum: 0.024 inch thick.
2. Corners: Factory mitered and soldered.
3. Surface-Mounted Type: Provide reglets with slotted holes for fastening to substrate, with neoprene or other suitable weatherproofing washers, and with channel for sealant at top edge.
4. Multiuse Type, Embedded: For multiuse embedment in masonry mortar joints.

- B. Counterflashings: Manufactured units of heights to overlap top edges of base flashings by 4 inches and in lengths not exceeding 12 feet designed to snap into reglets or through-wall-flashing receiver and compress against base flashings with joints lapped, from the following exposed metal:

1. Formed Aluminum: 0.024 inch thick.

- C. Aluminum Finish: Mill.

2.4 MATERIALS

- A. Aluminum Sheet: ASTM B 209, alloy as standard with manufacturer for finish required, with temper to suit forming operations and performance required.
- B. Stainless-Steel Sheet: ASTM A 240/A 240M or ASTM A 666, Type 304.

2.5 MISCELLANEOUS MATERIALS

- A. Fasteners: Manufacturer's recommended fasteners, suitable for application and designed to meet performance requirements. Furnish the following unless otherwise indicated:
 - 1. Exposed Penetrating Fasteners: Gasketed screws with hex washer heads matching color of sheet metal.
 - 2. Fasteners for Aluminum: Aluminum or Series 300 stainless steel.
 - 3. Fasteners for Stainless-Steel Sheet: Series 300 stainless steel.

2.6 FINISHES

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Noticeable variations in same piece are unacceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions, and other conditions affecting performance of the Work.
- B. Examine walls, roof edges, and parapets for suitable conditions for roof specialties.
- C. Verify that substrate is sound, dry, smooth, clean, sloped for drainage where applicable, and securely anchored.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

- A. General: Install roof specialties according to manufacturer's written instructions. Anchor roof specialties securely in place, with provisions for thermal and structural movement. Use fasteners, solder, protective coatings, separators, underlayments, sealants, and other miscellaneous items as required to complete roof-specialty systems.
 - 1. Securely attach roof specialties to carpentry by anchoring and fastening as indicated, complying with FM Global Property Loss Prevention Data Sheet 1-49, Perimeter Flashing.
 - 2. Install roof specialties level, plumb, true to line and elevation; with limited oil-canning and without warping, jogs in alignment, buckling, or tool marks.
 - 3. Provide uniform, neat seams with minimum exposure of solder and sealant.
 - 4. Install roof specialties to fit substrates and to result in weathertight performance. Verify shapes and dimensions of surfaces to be covered before manufacture.
 - 5. Torch cutting of roof specialties is not permitted.
 - 6. Do not use graphite pencils to mark metal surfaces.
- B. Metal Protection: Protect metals against galvanic action by separating dissimilar metals from contact with each other or with corrosive substrates by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.
 - 1. Coat concealed side of uncoated aluminum and stainless-steel roof specialties with bituminous coating where in contact with wood, ferrous metal, or cementitious construction.
 - 2. Bed flanges in thick coat of asphalt roofing cement where required by manufacturers of roof specialties for waterproof performance.
- C. Expansion Provisions: Allow for thermal expansion of exposed roof specialties.
 - 1. Space movement joints at a maximum of 12 feet with no joints within 18 inches of corners or intersections unless otherwise indicated on Drawings.
 - 2. When ambient temperature at time of installation is between 40 and 70 deg F, set joint members for 50 percent movement each way. Adjust setting proportionately for installation at higher ambient temperatures.
- D. Fastener Sizes: Use fasteners of sizes that penetrate wood blocking or sheathing not less than 1-1/4 inches for nails and not less than 3/4 inch for wood screws and not less than recommended by fastener manufacturer to achieve maximum pull-out resistance.
- E. Seal concealed joints with butyl sealant as required by roofing-specialty manufacturer.
- F. Seal joints as required for weathertight construction. Place sealant to be completely concealed in joint. Do not install sealants at temperatures below 40 deg F.
- G. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pre-tin edges of sheets to be soldered to a width of 1-1/2 inches; however, reduce pre-tinning where pre-tinned surface would show in completed Work. Tin edges of uncoated copper sheets using solder for copper. Do not use torches for soldering. Heat surfaces to receive solder and flow solder into joint. Fill joint completely. Completely remove flux and spatter from exposed surfaces.

3.3 ROOF-EDGE SPECIALITIES INSTALLATION

- A. Install cleats, cants, and other anchoring and attachment accessories and devices with concealed fasteners.
- B. Anchor roof edgings with manufacturer's required devices, fasteners, and fastener spacing to meet performance requirements.

3.4 REGLET AND COUNTERFLASHING INSTALLATION

- A. General: Coordinate installation of reglets and counterflashings with installation of base flashings.
- B. Surface-Mounted Reglets: Install reglets to receive flashings where flashing without embedded reglets is indicated on Drawings. Install at height so that inserted counterflashings overlap 4 inches over top edge of base flashings.
- C. Counterflashings: Insert counterflashings into reglets or other indicated receivers; ensure that counterflashings overlap 4 inches over top edge of base flashings. Lap counterflashing joints a minimum of 4 inches and bed with butyl sealant. Fit counterflashings tightly to base flashings.

3.5 CLEANING AND PROTECTION

- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
- B. Clean and neutralize flux materials. Clean off excess solder and sealants.
- C. Remove temporary protective coverings and strippable films as roof specialties are installed. On completion of installation, clean finished surfaces, including removing unused fasteners, metal filings, pop rivet stems, and pieces of flashing. Maintain roof specialties in a clean condition during construction.
- D. Replace roof specialties that have been damaged or that cannot be successfully repaired by finish touchup or similar minor repair procedures.

END OF SECTION 077100

SECTION 077200 - ROOF ACCESSORIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

- 1. Roof curbs.
- 2. Equipment supports.
- 3. Roof hatches.
- 4. Preformed flashing sleeves.

B. Related Sections:

- 1. Section 055000 "Metal Fabrications" for metal vertical ladders, ships' ladders, and stairs for access to roof hatches.
- 2. Section 076200 "Sheet Metal Flashing and Trim" for shop- and field-formed metal flashing, roof-drainage systems, roof expansion-joint covers, and miscellaneous sheet metal trim and accessories.
- 3. Section 077100 "Roof Specialties" for manufactured fasciae, copings, gravel stops, gutters and downspouts, and counterflashing.
- 4. Section 077233 "Roof Hatch Rail System" for manufactured railing system.

1.3 PERFORMANCE REQUIREMENTS

- A. General Performance: Roof accessories shall withstand exposure to weather and resist thermally induced movement without failure, rattling, leaking, or fastener disengagement due to defective manufacture, fabrication, installation, or other defects in construction.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of roof accessory indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
- B. Shop Drawings: For roof accessories. Include plans, elevations, keyed details, and attachments to other work. Indicate dimensions, loadings, and special conditions. Distinguish between plant- and field-assembled work.

- C. Samples: For each exposed product and for each color and texture specified, prepared on Samples of size to adequately show color.

1.5 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Roof plans, drawn to scale, and coordinating penetrations and roof-mounted items. Show the following:
 - 1. Size and location of roof accessories specified in this Section.
 - 2. Method of attaching roof accessories to roof or building structure.
 - 3. Other roof-mounted items including mechanical and electrical equipment, ductwork, piping, and conduit.
 - 4. Required clearances.

1.6 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For roof accessories to include in operation and maintenance manuals.

1.7 COORDINATION

- A. Coordinate layout and installation of roof accessories with roofing membrane and base flashing and interfacing and adjoining construction to provide a leakproof, weathertight, secure, and noncorrosive installation.
- B. Coordinate dimensions with rough-in information or Shop Drawings of equipment to be supported.

1.8 WARRANTY

- A. Special Warranty on Painted Finishes: Manufacturer's standard form in which manufacturer agrees to repair finishes or replace roof accessories that show evidence of deterioration of factory-applied finishes within specified warranty period.
 - 1. Fluoropolymer Finish: Deterioration includes, but is not limited to, the following:
 - a. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
 - b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
 - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
 - 2. Finish Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 METAL MATERIALS

- A. Zinc-Coated (Galvanized) Steel Sheet: ASTM A 653/A 653M, G90 coating designation and mill phosphatized for field painting where indicated.
 - 1. Mill-Phosphatized Finish: Manufacturer's standard for field painting.
- B. Aluminum Sheet: ASTM B 209, manufacturer's standard alloy for finish required, with temper to suit forming operations and performance required.
 - 1. Mill Finish: As manufactured.
 - 2. Clear Anodic Finish: AAMA 611, AA-M12C22A41, Class I, 0.018 mm or thicker.
 - a. Two-Coat Fluoropolymer Finish: AAMA 620. System consisting of primer and fluoropolymer color topcoat containing not less than 70 percent PVDF resin by weight.
 - 3. Baked-Enamel or Powder-Coat Finish: AAMA 2603 except with a minimum dry film thickness of 1.5 mils. Comply with coating manufacturer's written instructions for cleaning, conversion coating, and applying and baking finish.
 - 4. Concealed Finish: Pretreat with manufacturer's standard white or light-colored acrylic or polyester-backer finish consisting of prime coat and wash coat, with a minimum total dry film thickness of 0.5 mil.
- C. Aluminum Extrusions and Tubes: ASTM B 221, manufacturer's standard alloy and temper for type of use, finished to match assembly where used, otherwise mill finished.
- D. Copper Sheet: ASTM B 370, manufacturer's standard temper.
- E. Stainless-Steel Sheet and Shapes: ASTM A 240/A 240M or ASTM A 666, Type 304.
- F. Steel Shapes: ASTM A 36/A 36M, hot-dip galvanized according to ASTM A 123/A 123M unless otherwise indicated.
- G. Steel Tube: ASTM A 500, round tube.
- H. Galvanized-Steel Tube: ASTM A 500, round tube, hot-dip galvanized according to ASTM A 123/A 123M.
- I. Steel Pipe: ASTM A 53/A 53M, galvanized.

2.2 MISCELLANEOUS MATERIALS

- A. General: Provide materials and types of fasteners, protective coatings, sealants, and other miscellaneous items required by manufacturer for a complete installation.
- B. Cellulosic-Fiber Board Insulation: ASTM C 208, Type II, Grade 1, thickness as indicated.

- C. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D 1187.
- D. Underlayment:
 - 1. Felt: ASTM D 226, Type II (No. 30), asphalt-saturated organic felt, nonperforated.
 - 2. Polyethylene Sheet: 6-mil-thick polyethylene sheet complying with ASTM D 4397.
 - 3. Slip Sheet: Building paper, 3-lb/100 sq. ft. minimum, rosin sized.
- E. Fasteners: Roof accessory manufacturer's recommended fasteners suitable for application and metals being fastened. Match finish of exposed fasteners with finish of material being fastened. Provide nonremovable fastener heads to exterior exposed fasteners. Furnish the following unless otherwise indicated:
 - 1. Fasteners for Zinc-Coated or Aluminum-Zinc Alloy-Coated Steel: Series 300 stainless steel or hot-dip zinc-coated steel according to ASTM A 153/A 153M or ASTM F 2329.
 - 2. Fasteners for Aluminum Sheet: Aluminum or Series 300 stainless steel.
 - 3. Fasteners for Copper Sheet: Copper, hardware bronze, or passivated Series 300 stainless steel.
 - 4. Fasteners for Stainless-Steel Sheet: Series 300 stainless steel.
- F. Gaskets: Manufacturer's standard tubular or fingered design of neoprene, EPDM, PVC, or silicone or a flat design of foam rubber, sponge neoprene, or cork.
- G. Elastomeric Sealant: ASTM C 920, elastomeric polyurethane polymer sealant as recommended by roof accessory manufacturer for installation indicated; low modulus; of type, grade, class, and use classifications required to seal joints and remain watertight.
- H. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for expansion joints with limited movement.
- I. Asphalt Roofing Cement: ASTM D 4586, asbestos free, of consistency required for application.

2.3 ROOF CURBS

- A. Roof Curbs: Internally reinforced roof-curb units capable of supporting superimposed live and dead loads, including equipment loads and other construction indicated on Drawings; with welded or mechanically fastened and sealed corner joints, integral metal cant, and integrally formed deck-mounting flange at perimeter bottom.
- B. Size: Coordinate dimensions with roughing-in information or Shop Drawings of equipment to be supported.
- C. Loads: Verify load requirements of existing equipment to be removed and reinstalled.
- D. Material: Zinc-coated (galvanized) steel sheet, 0.052 inch thick.
 - 1. Finish: Mill phosphatized.
- E. Construction:

1. Insulation: Factory insulated with 1-1/2-inch- thick cellulosic-fiber board insulation.
2. Liner: Same material as curb, of manufacturer's standard thickness and finish.
3. Factory-installed wood nailer at top of curb, continuous around curb perimeter.
4. Fabricate curbs to minimum height of 12 inches unless otherwise indicated.
5. Top Surface: Level around perimeter with roof slope accommodated by sloping the deck-mounting flange.

2.4 ROOF HATCH

- A. Roof Hatches: Existing to remain. Remove and reinstall as required for installation of new roof flashing and Safety Railing System.
- B. Safety Railing System: Refer to 077233 "Roof Hatch Rail System" for manufactured railing system.
- C. Ladder-Assist Post: Roof-hatch manufacturer's standard device for attachment to roof-access ladder.
 1. Basis of Design Product: Subject to compliance with requirements, provide the following:
 - a. LadderUP Safety Post #LU-1 as manufactured by The Bilco Company P.O. Box 1203 New Haven, CT 06505.
 2. Other manufacturers providing acceptable products include:
 - a. JL Industries
 - b. Babcock Davis
 3. Operation: Post locks in place on full extension; release mechanism returns post to closed position.
 4. Height: 42 inches above finished roof deck.
 5. Material: Steel tube.
 6. Post: 1-1/2-inch- square 12 ga. Square steel post.
 7. Finish: Manufacturer's standard powder coat.
 - a. Color: Safety yellow.

2.5 PREFORMED FLASHING SLEEVES

- A. Exhaust Vent Flashing: Double-walled metal flashing sleeve or boot, insulation filled, with integral deck flange, 12 inches high, with removable metal hood and slotted metal collar.
 1. Metal: Aluminum sheet, 0.063 inch thick.
 2. Diameter: As Indicated, verify existing dimensions in field.
 3. Finish: Manufacturer's standard.
- B. Vent Stack Flashing: Metal flashing sleeve, uninsulated, with integral deck flange.
 1. Metal: Aluminum sheet, 0.063 inch thick.
 2. Height: 7 inches.
 3. Diameter: 3 inches or 4 inches, verify existing dimensions in field.
 4. Finish: Manufacturer's standard.

2.6 GENERAL FINISH REQUIREMENTS

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions, and other conditions affecting performance of the Work.
- B. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
- C. Verify dimensions of roof openings for roof accessories.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. General: Install roof accessories according to manufacturer's written instructions.
 - 1. Install roof accessories level, plumb, true to line and elevation, and without warping, jogs in alignment, excessive oil canning, buckling, or tool marks.
 - 2. Anchor roof accessories securely in place so they are capable of resisting indicated loads.
 - 3. Use fasteners, separators, sealants, and other miscellaneous items as required to complete installation of roof accessories and fit them to substrates.
 - 4. Install roof accessories to resist exposure to weather without failing, rattling, leaking, or loosening of fasteners and seals.
- B. Metal Protection: Protect metals against galvanic action by separating dissimilar metals from contact with each other or with corrosive substrates by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.
 - 1. Coat concealed side of uncoated aluminum roof accessories with bituminous coating where in contact with wood, ferrous metal, or cementitious construction.
 - 2. Underlayment: Where installing roof accessories directly on cementitious or wood substrates, install a course of felt underlayment and cover with a slip sheet, or install a course of polyethylene sheet.
 - 3. Bed flanges in thick coat of asphalt roofing cement where required by manufacturers of roof accessories for waterproof performance.
- C. Roof Curb Installation: Install each roof curb so top surface is level.

- D. Equipment Support Installation: Install equipment supports so top surfaces are level with each other.
- E. Roof-Hatch Installation:
 - 1. If required, re-install roof hatch so top surface of hatch curb is level.
 - 2. Verify that roof hatch operates properly. Clean, lubricate, and adjust operating mechanism and hardware.
 - 3. Attach safety railing system to roof-hatch curb.
 - 4. Attach ladder-assist post according to manufacturer's written instructions.
- F. Pipe Support Installation: Install pipe supports so top surfaces are in contact with and provide equally distributed support along length of supported item.
- G. Preformed Flashing-Sleeve Installation: Secure flashing sleeve to roof membrane according to flashing-sleeve manufacturer's written instructions.
- H. Seal joints with elastomeric or butyl sealant as required by roof accessory manufacturer.

3.3 REPAIR AND CLEANING

- A. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing according to ASTM A 780.
- B. Touch up factory-primed surfaces with compatible primer ready for field painting according to manufacturer's recommendations.
- C. Clean exposed surfaces according to manufacturer's written instructions.
- D. Clean off excess sealants.
- E. Replace roof accessories that have been damaged or that cannot be successfully repaired by finish touchup or similar minor repair procedures.

END OF SECTION 077200

SECTION 077233 – ROOF HATCH RAIL SYSTEM

PART 1 - GENERAL

1.1 SUMMARY

- A. Work Included: Provide factory-fabricated fixed hatch railing system.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data.
- B. Shop Drawings: Submit shop drawings including profiles, accessories, location, adjacent construction interface, and dimensions.
- C. Warranty: Submit executed copy of manufacturer's standard warranty.

1.3 QUALITY ASSURANCE

- A. Manufacturer: A minimum of 5 years experience manufacturing similar products.
- B. Installer: A minimum of 2 years experience installing similar products.
- C. Manufacturer's Quality System: Registered to ISO 9001:2008 Quality Standards including in-house engineering for product design activities.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Deliver products in manufacturer's original packaging. Store materials in a dry, protected, well-ventilated area. Inspect product upon receipt and report damaged material immediately to delivering carrier and note such damage on the carrier's freight bill of lading.

1.5 WARRANTY

- A. Manufacturer's Warranty: Provide manufacturer's standard warranty. Materials shall be free of defects in material and workmanship for a period of five 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.

PART 2 - PRODUCTS

2.1 MANUFACTURER

- A. Manufacturers: Subject to compliance with requirements, provide one of following products, or approved equal:
 - 1. Bil-Guard 2.0 Roof Hatch Railing System by The BILCO Company, P.O. Box 1203, New Haven, CT 06505, 800-366-6530, www.bilco.com.

2. KeeHatch Safety Railing System by KEESafety, 100 Stradtman St, Buffalo, NY 14206, 800-851-5181, www.keesafety.com
3. Surround Roof Hatch Railing System by Fixfast USA, 6210 S. Indianapolis Rd, Whitestown, IN 46075, 888-973-030,8 www.fixfastusa.com

2.2 HATCH RAIL SYSTEM

- A. Furnish and install where indicated on plans hatch rail system. The hatch rail system shall be field assembled and installed (by others) per the manufacturer's instructions.
- B. Performance characteristics:
 1. Safety yellow powder coat paint finish.
 2. Hatch rail system shall attach to the cap flashing of the roof hatch and shall not penetrate any roofing material.
 3. Hatch rail system shall satisfy the requirements of OSHA 29 CFR 1910.23 and shall meet OSHA strength requirements with a factor of safety of two.
 4. Corrosion resistant construction with a five-year warranty.
 5. Hinged gate shall ensure continuous barrier around the roof hatch.
 6. Self-closing gate hinge and positive latching system provided with hatch rail system.
- C. Posts and Rails: 1-1/4" (32mm) 6061 T6 schedule 40 aluminum pipe
- D. Hardware: Mounting brackets shall be 3/8" (9mm) thick extruded aluminum. Pivoting post guides with compression fittings and latching mechanism shall be cast aluminum. Self-closing hinges and all fasteners shall be type 316 stainless steel.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and openings for compliance with requirements for installation tolerances and other conditions affecting performance. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Install products in strict accordance with manufacturer's instructions and approved submittals. Locate units level, plumb, and in proper alignment with adjacent work.
 1. Test units for proper function and adjust until proper operation is achieved.
 2. Repair finishes damaged during installation.
 3. Restore finishes so no evidence remains of corrective work.

3.3 ADJUSTING AND CLEANING

- A. Clean exposed surfaces using methods acceptable to the manufacturer which will not damage finish.

END OF SECTION 077233

SECTION 07 84 13 - PENETRATION FIRESTOPPING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The Contractor, Subcontractors, and/or suppliers providing goods or services referenced in or related to this Section shall also be bound by the Documents identified in Division 01 Section "Summary", Paragraph 1.1A, entitled "Related Documents."

1.2 SUMMARY

- A. Section Includes:
 - 1. Penetrations in fire-resistance-rated walls, including open penetrations.
 - 2. Penetrations in horizontal assemblies.
- B. Related Sections include the following:
 - 1. Division 07 Section "Thermal Insulation" for fire safing insulation in non-fire rated horizontal floor/ceiling assemblies.
 - 2. Division 07 Section "Fire-Resistive Joint Systems" for joints in or between fire-resistance-rated construction.
 - 3. Division 22 Sections specifying plumbing piping penetrations.

1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For each through-penetration firestop system, show each type of construction condition penetrated, relationships to adjoining construction, and type of penetrating item. Include firestop design designation of qualified testing and inspecting agency that evidences compliance with requirements for each condition indicated.
 - 1. Submit documentation, including illustrations, from a qualified testing and inspecting agency that is applicable to each through-penetration firestop system configuration for construction and penetrating items.
 - 2. Where Project conditions require modification to a qualified testing and inspecting agency's illustration for a particular through-penetration firestop condition, submit illustration, with modifications marked, approved by through-penetration firestop system manufacturer's fire-protection engineer as an engineering judgment or equivalent fire-resistance-rated assembly.

3. For those firestop applications that exist for which no qualified tested system is available through a manufacturer, an engineering judgment derived from similar qualified tested system designs or other tests is to be submitted to local authorities having jurisdiction for their review and approval prior to installation. Engineering judgment documents must follow requirements set forth by the International Firestop Council.
- C. Through-Penetration Firestop System Schedule: Indicate locations of each through-penetration firestop system, along with the following information:
 1. Types of penetrating items.
 2. Types of constructions penetrated, including fire-resistance ratings and, where applicable, thicknesses of construction penetrated.
 3. Through-penetration firestop systems for each location identified by firestop design designation of qualified testing and inspecting agency.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- B. Product Certificates: For through-penetration firestop system products, signed by product manufacturer.
- C. Product Test Reports: From a qualified testing agency indicating through-penetration firestop system complies with requirements, based on comprehensive testing of current products.
- D. Material Safety Data Sheets.

1.6 QUALITY ASSURANCE

- A. Source Limitations: Obtain through-penetration firestop systems, for each kind of penetration and construction condition indicated, through one source from a single manufacturer.
- B. Fire-Test-Response Characteristics: Provide through-penetration firestop systems that comply with the following requirements and those specified in Part 1 "Performance Requirements" Article:
 1. Penetration firestopping tests are performed by a qualified testing agency acceptable to authorities having jurisdiction.
 2. Penetration firestopping is identical to those tested per testing standard referenced in "Penetration Firestopping" Article. Provide rated systems complying with the following requirements:
 - a. Penetration firestopping products bear classification marking of qualified testing and inspecting agency.
 - b. Classification markings on penetration firestopping correspond to designations listed by the following:
 - 1) UL in its "Fire Resistance Directory."
 - a) All UL listed firestopping assemblies are to be FM Approved as well.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver through-penetration firestop system products to Project site in original, unopened containers or packages with intact and legible manufacturers' labels identifying product and manufacturer, date of manufacture, lot number, shelf life if applicable, qualified testing and inspecting agency's classification marking applicable to Project, curing time, and mixing instructions for multicomponent materials.
- B. Store and handle materials for through-penetration firestop systems to prevent their deterioration or damage due to moisture, temperature changes, contaminants, or other causes.

1.8 PROJECT CONDITIONS

- A. Environmental Limitations: Do not install through-penetration firestop systems when ambient or substrate temperatures are outside limits permitted by through-penetration firestop system manufacturers or when substrates are wet due to rain, frost, condensation, or other causes.
- B. Ventilate through-penetration firestop systems per manufacturer's written instructions by natural means or, where this is inadequate, forced-air circulation.
- C. Do not use products and materials that contain flammable solvents.

1.9 COORDINATION

- A. Coordinate construction of openings and penetrating items to ensure that through-penetration firestop systems are installed according to specified requirements.
- B. Coordinate sizing of sleeves, openings, core-drilled holes, or cut openings to accommodate through-penetration firestop systems.
- C. Notify Owner's inspecting agency at least seven days in advance of through-penetration firestop system installations; confirm dates and times on days preceding each series of installations.
- D. Do not cover up through-penetration firestop system installations that will become concealed behind other construction until each installation has been examined by Owner's inspecting agency and building inspector, if required by authorities having jurisdiction.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Products: Subject to compliance with requirements, provide one of the through-penetration firestop systems indicated for each application in the Through-Penetration Firestop System Schedule at the end of Part 3 that are produced by one of the following manufacturers:
 - 1. Hilti, Inc.
 - 2. 3M; Fire Protection Products Division.
 - 3. Tremco; Tremstop Fire Protection Systems Group.

2.2 PERFORMANCE REQUIREMENTS

- A. General: For penetrations through fire-resistance-rated constructions, including both empty openings and openings containing penetrating items, provide through-penetration firestop systems that are produced and installed to resist spread of fire according to requirements indicated, resist passage of smoke and other gases, and maintain original fire-resistance rating of construction penetrated.
- B. For through-penetration firestop systems exposed to view, traffic, moisture, and physical damage, provide products that, after curing, do not deteriorate when exposed to these conditions both during and after construction.
 - 1. For piping penetrations for plumbing and wet-pipe sprinkler systems, provide moisture-resistant through-penetration firestop systems.
 - 2. For floor penetrations with annular spaces exceeding 4 inches in width and exposed to possible loading and traffic, provide firestop systems capable of supporting floor loads involved, either by installing floor plates or by other means.
 - 3. For penetrations involving insulated piping, provide through-penetration firestop systems not requiring removal of insulation.

2.3 PENETRATION FIRESTOPPING

- A. Provide penetration firestopping that is produced and installed to resist spread of fire according to requirements indicated, resist passage of smoke and other gases, and maintain original fire-resistance rating of construction penetrated. Penetration firestopping systems shall be compatible with one another, with the substrates forming openings, and with penetrating items if any.
- B. Penetrations in Fire-Resistance-Rated Walls: Provide penetration firestopping with ratings determined per ASTM E 814 or UL 1479, based on testing at a positive pressure differential of 0.01-inch wg.
 - 1. Fire-resistance-rated walls include fire walls, fire-barrier walls, smoke-barrier walls, and fire partitions.
 - 2. F-Rating: Not less than the fire-resistance rating of constructions penetrated.
- C. Penetrations in Horizontal Assemblies: Provide penetration firestopping with ratings determined per ASTM E 814 or UL 1479, based on testing at a positive pressure differential of 0.01-inch wg.
 - 1. Horizontal assemblies include floors, floor/ceiling assemblies and ceiling membranes of roof/ceiling assemblies.
 - 2. F-Rating: At least 1 hour, but not less than the fire-resistance rating of constructions penetrated.
 - 3. T-Rating: At least 1 hour, but not less than the fire-resistance rating of constructions penetrated except for floor penetrations within the cavity of a wall.
- D. Exposed Penetration Firestopping: Provide products with flame-spread and smoke-developed indexes of less than 25 and 450, respectively, as determined per ASTM E 84.

- E. VOC Content: Provide penetration firestopping that complies with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
1. Architectural Sealants: 250 g/L.
 2. Sealant Primers for Nonporous Substrates: 250 g/L.
 3. Sealant Primers for Porous Substrates: 775 g/L.
- F. Accessories: Provide components for each through-penetration firestop system that are needed to install fill materials and to comply with Part 1 "Performance Requirements" Article. Use only components specified by through-penetration firestop system manufacturer and approved by qualified testing and inspecting agency for firestop systems indicated. Accessories include, but are not limited to, the following items:
1. Permanent forming/damming/backing materials, including the following:
 - a. Slag-/rock-wool-fiber insulation.
 - b. Sealants used in combination with other forming/damming/backing materials to prevent leakage of fill materials in liquid state.
 - c. Fire-rated form board.
 - d. Fillers for sealants.
 2. Temporary forming materials.
 3. Substrate primers.
 4. Collars.
 5. Steel sleeves.

2.4 FILL MATERIALS

- A. General: Provide through-penetration firestop systems containing the types of fill materials required in the Through-Penetration Firestop System Schedule at the end of Part 3 by referencing the types of materials described in this Article.
- Fill materials are those referred to in directories of referenced testing and inspecting agencies as "fill," "void," or "cavity" materials.
- B. Cast-in-Place Firestop Devices: Factory-assembled devices for use in cast-in-place concrete floors and consisting of an outer metallic or plastic sleeve lined with an intumescent strip, a radial extended flange attached to one end of the sleeve for fastening to concrete formwork, and a neoprene gasket.
- C. Latex Sealants: Single-component latex formulations that after cure do not re-emulsify during exposure to moisture.
- D. Firestop Devices: Factory-assembled collars formed from galvanized steel and lined with intumescent material sized to fit specific diameter of penetrant.
- E. Intumescent Composite Sheets: Rigid panels consisting of aluminum-foil-faced elastomeric sheet bonded to galvanized steel sheet.
- F. Intumescent Putties: Nonhardening dielectric, water-resistant putties containing no solvents, inorganic fibers, or silicone compounds.

- G. Intumescent Wrap Strips: Single-component intumescent elastomeric sheets with aluminum foil on one side.
- H. Pillows/Bags/Blocks: Reusable heat-expanding pillows/bags consisting of glass-fiber cloth cases filled with a combination of mineral-fiber, water-insoluble expansion agents, and fire-retardant additives.
- I. Silicone Foams: Multicomponent, silicone-based liquid elastomers that, when mixed, expand and cure in place to produce a flexible, nonshrinking foam.
- J. Silicone Sealants: Single-component, silicone-based, neutral-curing elastomeric sealants of grade indicated below:
 - 1. Grade: Pourable (self-leveling) formulation for openings in floors and other horizontal surfaces, and nonsag formulation for openings in vertical and other surfaces requiring a nonslumping, gunnable sealant, unless indicated firestop system limits use to nonsag grade for both opening conditions.
 - 2. Grade for Horizontal Surfaces: Pourable (self-leveling) formulation for openings in floors and other horizontal surfaces.
 - 3. Grade for Vertical Surfaces: Nonsag formulation for openings in vertical and other surfaces.

2.5 MIXING

- A. For those products requiring mixing before application, comply with through-penetration firestop system manufacturer's written instructions for accurate proportioning of materials, water (if required), type of mixing equipment, selection of mixer speeds, mixing containers, mixing time, and other items or procedures needed to produce products of uniform quality with optimum performance characteristics for application indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Installer present, for compliance with requirements for opening configurations, penetrating items, substrates, and other conditions affecting performance of work.
 - 1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Surface Cleaning: Clean out openings immediately before installing through-penetration firestop systems to comply with firestop system manufacturer's written instructions and with the following requirements:
 - 1. Remove from surfaces of opening substrates and from penetrating items foreign materials that could interfere with adhesion of through-penetration firestop systems.

2. Clean opening substrates and penetrating items to produce clean, sound surfaces capable of developing optimum bond with through-penetration firestop systems. Remove loose particles remaining from cleaning operation.
 3. Remove laitance and form-release agents from concrete.
- B. Priming: Prime substrates where recommended in writing by through-penetration firestop system manufacturer using that manufacturer's recommended products and methods. Confine primers to areas of bond; do not allow spillage and migration onto exposed surfaces.
- C. Masking Tape: Use masking tape to prevent through-penetration firestop systems from contacting adjoining surfaces that will remain exposed on completion of Work and that would otherwise be permanently stained or damaged by such contact or by cleaning methods used to remove smears from firestop system materials. Remove tape as soon as possible without disturbing firestop system's seal with substrates.

3.3 THROUGH-PENETRATION FIRESTOP SYSTEM INSTALLATION

- A. General: Install through-penetration firestop systems to comply with Part 1 "Performance Requirements" Article and with firestop system manufacturer's written installation instructions and published drawings for products and applications indicated.
- B. Install forming/damming/backing materials and other accessories of types required to support fill materials during their application and in the position needed to produce cross-sectional shapes and depths required to achieve fire ratings indicated.
1. After installing fill materials and allowing them to fully cure, remove combustible forming materials and other accessories not indicated as permanent components of firestop systems.
- C. Install fill materials for firestop systems by proven techniques to produce the following results:
1. Fill voids and cavities formed by openings, forming materials, accessories, and penetrating items as required to achieve fire-resistance ratings indicated.
 2. Apply materials so they contact and adhere to substrates formed by openings and penetrating items.
 3. For fill materials that will remain exposed after completing Work, finish to produce smooth, uniform surfaces that are flush with adjoining finishes.

3.4 IDENTIFICATION

- A. Identify through-penetration firestop systems with preprinted plastic labels. Attach labels permanently to surfaces adjacent to and within 6 inches of edge of the firestop systems, and on both sides of partition, so that labels will be visible to anyone seeking to remove penetrating items or firestop systems. Use self-adhering type with adhesives capable of permanently bonding labels to surfaces on which labels are placed and, in combination with label material, will result in partial destruction of label if removal is attempted. Include the following information on labels:

1. The words "WARNING - PENETRATION FIRESTOPPING SYSTEM - DO NOT DISTURB. NOTIFY BUILDING MANAGEMENT OF ANY DAMAGE."
2. Contractor's name, address, and phone number.
3. Through-penetration firestop system designation of applicable testing and inspecting agency.
4. Date of installation.
5. Through-penetration firestop system manufacturer's name.
6. Installer's name.

3.5 FIELD QUALITY CONTROL

- A. Inspecting Agency: Owner will engage a qualified, independent inspecting agency to inspect through-penetration firestops. Independent inspecting agency shall comply with ASTM E 2174 requirements including those related to qualifications, conducting inspections, and preparing test reports.
 1. Inspection of through-penetration firestopping shall be performed in accordance with ASTM E 2174, "Standard Practice for On-Site Inspection of Installed Fire Stops" or other recognized standard.
- B. Where deficiencies are found, repair or replace through-penetration firestop systems so they comply with requirements.
- C. Proceed with enclosing through-penetration firestop systems with other construction only after inspection reports are issued and firestop installations comply with requirements.

3.6 CLEANING AND PROTECTING

- A. Clean off excess fill materials adjacent to openings as Work progresses by methods and with cleaning materials that are approved in writing by through-penetration firestop system manufacturers and that do not damage materials in which openings occur.
- B. Provide final protection and maintain conditions during and after installation that ensure that through-penetration firestop systems are without damage or deterioration at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated through-penetration firestop systems immediately and install new materials to produce systems complying with specified requirements.

3.7 THROUGH-PENETRATION FIRESTOP SYSTEM SCHEDULE

- A. Where UL-classified systems are indicated, they refer to alpha-alpha-numeric designations listed in UL's "Fire Resistance Directory" under product Category XHEZ.
- B. Firestop Systems with No Penetrating Items.
 1. Available UL-Classified Systems: C-AJ-001-0999.
- C. Firestop Systems for Metallic Pipes, Conduit or Tubing:

1. Available UL-Classified Systems: C-AJ-1001-1999 and W-L-1001-1999.
- D. Firestop Systems for Nonmetallic Pipe, Conduit or Tubing:
 1. Available UL-Classified Systems: C-AJ-2001-2999 and W-L-2001-2999.
- E. Firestop Systems for Electrical Cables:
 1. Available UL-Classified Systems: C-AJ-3001-3999 and W-L-3001-3999.
- F. Firestop Systems for Cable Trays:
 1. Available UL-Classified Systems: C-AJ-4001-4999 and W-L-3001-3999.
- G. Firestop Systems for Insulated Pipes:
 1. Available UL-Classified Systems: C-AJ-5001-5999 and W-L-5001-5999.
- H. Firestop Systems for Miscellaneous Electrical Penetrants (Busducts):
 1. Available UL-Classified Systems: C-AJ-6001-6999 and W-L-6001-6999.
- I. Firestop Systems for Miscellaneous Mechanical Penetrants (Ductwork):
 1. Available UL-Classified Systems: C-AJ-7001-7999 and W-L-7001-7999.
- J. Firestop Systems for Groupings of Penetrants:
 1. Available UL-Classified Systems: C-AJ-8001-8999 and W-L-8001-8999.

END OF SECTION 07 84 13

SECTION 07 92 00 - JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The Contractor, Subcontractors, and/or suppliers providing goods or services referenced in or related to this Section shall also be bound by the Documents identified in Division 01 Section "Summary", Paragraph 1.1A, entitled "Related Documents."

1.2 SUMMARY

- A. Section Includes:

1. Silicone joint sealants.
2. Urethane joint sealants.
3. Latex joint sealants.
4. Acoustical joint sealants.

- B. Related Sections include the following:

1. Division 04 Section "Unit Masonry" for masonry control and expansion joint fillers and gaskets.
2. Division 07 Section "Fire-Resistive Joint Systems" for sealing joints in fire-resistance-rated construction.
3. Division 09 Section "Gypsum Board Assemblies" for sealing perimeter joints of gypsum board partitions to reduce sound transmission.
4. Division 09 Section "Acoustical Panel Ceilings" for sealing edge moldings at perimeters of acoustical ceilings.

1.3 PRECONSTRUCTION TESTING

- A. Preconstruction Compatibility and Adhesion Testing: Submit to joint-sealant manufacturers, for testing indicated below, samples of materials that will contact or affect joint sealants.

1. Use ASTM C 1087 to determine whether priming and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of joint sealants to joint substrates.
2. Submit not fewer than eight pieces of each type of material, including joint substrates, shims, joint-sealant backings, secondary seals, and miscellaneous materials.
3. Schedule sufficient time for testing and analyzing results to prevent delaying the Work.
4. For materials failing tests, obtain joint-sealant manufacturer's written instructions for corrective measures including use of specially formulated primers.
5. Testing will not be required if joint-sealant manufacturers submit joint preparation data that are based on previous testing of current sealant products for adhesion to, and compatibility with, joint substrates and other materials matching those submitted.

1.4 PERFORMANCE REQUIREMENTS

- A. Provide elastomeric joint sealants that establish and maintain watertight and airtight continuous joint seals without staining or deteriorating joint substrates.
- B. Provide joint sealants for interior applications that establish and maintain airtight and water-resistant continuous joint seals without staining or deteriorating joint substrates.

1.5 ACTION SUBMITTALS

- A. Product Data: For each joint-sealant product indicated.
- B. Samples for Initial Selection: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.
- C. Samples for Verification: For each type and color of joint sealant required, provide Samples with joint sealants in 1/2-inch- wide joints formed between two 6-inch- long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.
- D. Joint-Sealant Schedule: Include the following information:
 - 1. Joint-sealant application, joint location, and designation.
 - 2. Joint-sealant manufacturer and product name.
 - 3. Joint-sealant formulation.
 - 4. Joint-sealant color.

1.6 INFORMATIONAL SUBMITTALS

- A. Product Certificates: For each type of joint sealant and accessory, signed by product manufacturer.
- B. Qualification Data: For Installer.
- C. Compatibility and Adhesion Test Reports: From sealant manufacturer, indicating the following:
 - 1. Materials forming joint substrates and joint-sealant backings have been tested for compatibility and adhesion with joint sealants.
 - 2. Interpretation of test results and written recommendations for primers and substrate preparation needed for adhesion.
- D. Product Test Reports: Based on comprehensive testing of product formulations performed by a qualified testing agency, indicating that sealants comply with requirements.
- E. Preconstruction Compatibility and Adhesion Test Reports: From sealant manufacturer, indicating the following:
 - 1. Materials forming joint substrates and joint-sealant backings have been tested for compatibility and adhesion with joint sealants.

2. Interpretation of test results and written recommendations for primers and substrate preparation needed for adhesion.

F. Warranties: Special warranties specified in this Section.

1.7 QUALITY ASSURANCE

- A. Installer Qualifications: Manufacturer's authorized Installer who is approved or licensed for installation of elastomeric sealants required for this Project.
- B. Source Limitations: Obtain each type of joint sealant through one source from a single manufacturer.
- C. Product Testing: Test joint sealants using a qualified testing agency.
 1. Testing Agency Qualifications: An independent testing agency qualified according to ASTM C 1021 to conduct the testing indicated.
 2. Test according to SWRI's Sealant Validation Program for compliance with requirements specified by reference to ASTM C 920 for adhesion and cohesion under cyclic movement, adhesion-in-peel, and indentation hardness.
- D. Mockups: Build mockups incorporating sealant joints, as follows, to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution:
 1. Joints in mockups of assemblies specified in other Sections that are indicated to receive elastomeric joint sealants, which are specified by reference to this Section.
 2. Each type of sealant and joint substrate indicated.
- E. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination."

1.8 PROJECT CONDITIONS

- A. Do not proceed with installation of joint sealants under the following conditions:
 1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F.
 2. When joint substrates are wet.
 3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
 4. Contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

1.9 WARRANTY

- A. Special Installer's Warranty: Installer's standard form in which Installer agrees to repair or replace elastomeric joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
 - 1. Warranty Period: Two years from date of Substantial Completion.
- B. Special Manufacturer's Warranty: Manufacturer's standard form in which elastomeric sealant manufacturer agrees to furnish elastomeric joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.
 - 1. Warranty Period for Urethane: Five years from date of Substantial Completion.
 - 2. Warranty Period for Silicone: 20 years from date of Substantial Completion.
- C. Special warranties specified in this Article exclude deterioration or failure of elastomeric joint sealants from the following:
 - 1. Movement of the structure resulting in stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression caused by structural settlement or errors attributable to design or construction.
 - 2. Disintegration of joint substrates from natural causes exceeding design specifications.
 - 3. Mechanical damage caused by individuals, tools, or other outside agents.
 - 4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

- A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.
- B. VOC Content of Interior Sealants: Provide sealants and sealant primers for use inside the weatherproofing system that comply with the following limits for VOC content when calculated according to 40 CFR 59, Part 59, Subpart D (EPA Method 24):
 - 1. Architectural Sealants: 250 g/L.
 - 2. Sealant Primers for Nonporous Substrates: 250 g/L.
 - 3. Sealant Primers for Porous Substrates: 775 g/L.
- C. Liquid-Applied Joint Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied joint sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.

- D. Stain-Test-Response Characteristics: Where sealants are specified to be nonstaining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.
- E. Suitability for Contact with Food: Where sealants are indicated for joints that will come in repeated contact with food, provide products that comply with 21 CFR 177.2600.
- F. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range.

2.2 SILICONE JOINT SEALANTS

- A. Single-Component, Nonsag, Neutral-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 100/50, for Use NT.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Dow Corning Corporation; 790.
 - b. Pecora Corporation; 890 NST.
 - c. Tremco Incorporated; Spectrem 1.
- B. Mildew Resistant, Single-Component, Nonsag, Acid-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 25, for Use NT.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Dow Corning Corporation; 786 Mildew Resistant.
 - b. GE Silicones; Sanitary SCS1700.
 - c. Tremco; Tremsil 200 Sanitary.

2.3 URETHANE JOINT SEALANTS

- A. Multicomponent, Pourable, Traffic-Grade, Urethane Joint Sealant: ASTM C 920. Type M, Grade P, Class 25, for Use T and I.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. BASF Corporation-Construction Systems; MasterSeal SL 2.
 - b. Pecora Corporation; Dynatrol II-SG.
 - c. Sherwin Williams; Loxon 2K SL.
 - d. Tremco; THC-900.

2.4 LATEX JOINT SEALANTS

- A. Acrylic Latex: Acrylic latex or siliconized acrylic latex, ASTM C 834, Type OP, Grade NF.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. American Sealants, Inc.; ASI 174.

- b. Pecora Corporation; AC-20+.
- c. Sherwin Williams; 950A.
- d. Tremco; Tremflex 834.

2.5 ACOUSTICAL JOINT SEALANTS

- A. Acoustical Sealant for Exposed and Concealed Joints: Manufacturer's standard nonsag, paintable, nonstaining latex sealant complying with ASTM C 834 and the following:
 - 1. Product effectively reduces airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies according to ASTM E 90.
 - 2. Products: Subject to compliance with requirements, provide one of the following:
 - a. Green Glue; Green Glue Noiseproofing Sealant.
 - b. Pecora Corporation; AC-20 FTR Acoustical and Insulation Sealant.
 - c. Sherwin Williams; 950A.
 - d. United States Gypsum Co.; SHEETROCK Acoustical Sealant.

2.6 JOINT-SEALANT BACKING

- A. General: Provide sealant backings of material and type that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
- B. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin) as approved in writing by joint-sealant manufacturer for joint application indicated, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.
- C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.

2.7 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.
- C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:
 - 1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
 - 2. Clean porous joint substrate surfaces by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:
 - a. Concrete.
 - b. Masonry.
 - c. Unglazed surfaces of ceramic tile.
 - 3. Remove laitance and form-release agents from concrete.
 - 4. Clean nonporous surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:
 - a. Metal.
 - b. Glass.
 - c. Porcelain enamel.
 - d. Glazed surfaces of ceramic tile.
- B. Joint Priming: Prime joint substrates, where recommended in writing by joint-sealant manufacturer, based on preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Install sealant backings of type indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
 - 1. Do not leave gaps between ends of sealant backings.
 - 2. Do not stretch, twist, puncture, or tear sealant backings.
 - 3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.
- D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.
- E. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
 - 1. Place sealants so they directly contact and fully wet joint substrates.
 - 2. Completely fill recesses in each joint configuration.
 - 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- F. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
 - 1. Remove excess sealant from surfaces adjacent to joints.
 - 2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
 - 3. Provide concave joint configuration per Figure 5A in ASTM C 1193, unless otherwise indicated.
- G. Acoustical Sealant Installation: At sound-rated assemblies and elsewhere as indicated, seal construction at perimeters, behind control joints, and at openings and penetrations with a continuous bead of acoustical sealant. Install acoustical sealant at both faces of partitions at perimeters and through penetrations. Comply with ASTM C 919 and with manufacturer's written recommendations.

3.4 CLEANING

- A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.5 PROTECTION

- A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

3.6 JOINT-SEALANT SCHEDULE

- A. Joint-Sealant Application: Exterior joints in vertical surfaces and horizontal nontraffic surfaces.
1. Joint Locations:
 - a. Perimeter joints at frames of doors.
 - b. Other joints as indicated.
 2. Silicone Joint Sealant: Single component, nonsag, neutral curing, Class 100/50.
 3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors, for each material.
- B. Joint-Sealant Application: Interior joints in horizontal traffic surfaces.
1. Joint Locations:
 - a. Isolation joints in cast-in-place concrete slabs.
 - b. Control and expansion joints in tile flooring.
 - c. Other joints as indicated.
 2. Urethane Joint Sealant: Multicomponent, pourable, traffic grade, Class 25.
 3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors, for each material.
- C. Joint-Sealant Application: Interior joints in all other vertical surfaces and horizontal nontraffic surfaces.
1. Joint Locations:
 - a. Tile control and expansion joints.
 - b. Vertical joints on exposed surfaces of interior unit masonry walls and partitions.
 - c. Perimeter joints between interior wall surfaces and frames of interior doors.
 - d. Other joints as indicated.
 2. Joint Sealant: Latex.
 3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.
- D. Joint-Sealant Application: Mildew-resistant interior joints in vertical surfaces and horizontal nontraffic surfaces.
1. Joint Sealant Location:

- a. Joints between plumbing fixtures and adjoining walls, floors, and counters.
 - b. Other joints as indicated.
 - 2. Joint Sealant: Single component, nonsag, mildew resistant, acid curing silicone.
 - 3. Joint-Sealant Color: White.
- E. Joint-Sealant Application: Interior acoustical joints in vertical surfaces and horizontal nontraffic surfaces.
- 1. Joint Location:
 - a. Acoustical joints where indicated.
 - b. Other joints as indicated.
 - 2. Joint Sealant: Acoustical.
 - 3. Joint-Sealant Color: As selected by Architect from manufacturer's full range.

END OF SECTION 07 92 00

SECTION 08 31 13 – ACCESS DOORS AND FRAMES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The Contractor, Subcontractors, and/or suppliers providing goods or services referenced in or related to this Section shall also be bound by the Documents identified in Division 01 Section “Summary”, Paragraph 1.1A, entitled “Related Documents.”

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Access doors and frames for walls and ceilings. Used for accessing and installing roof drain piping.
- B. Related Sections include the following:
 - 1. Division 09 Section “Painting” for field finishing factory-primed access doors and frames.
 - 2. Division 22 Section “Storm Drainage Piping Specialties” for roof drain piping.

1.3 SUBMITTALS

- A. Product Data: For each type of access door and frame indicated. Include construction details, fire ratings, materials, individual components and profiles, and finishes.
- B. Shop Drawings: Show fabrication and installation details of access doors and frames for each type of substrate. Include plans, elevations, sections, details, and attachments to other work.
- C. Samples: For each door face material, at least 3 by 5 inches in size, in specified finish.
- D. Access Door and Frame Schedule: Provide complete access door and frame schedule, including types, locations, sizes, latching or locking provisions, and other data pertinent to installation.

1.4 QUALITY ASSURANCE

- A. Size Variations: Obtain Architect's acceptance of manufacturer's standard-size units, which may vary slightly from sizes indicated.

1.5 COORDINATION

- A. Verification: Determine specific locations and sizes for access doors needed to gain access to concealed plumbing, mechanical, or other concealed work, and indicate in the schedule specified in "Submittals" Article.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Fire-Rated Access Doors and Frames: Units complying with NFPA 80 that are identical to access door and frame assemblies tested for fire-test-response characteristics per the following test method and that are listed and labeled by UL or another testing and inspecting agency acceptable to authorities having jurisdiction:

- 1. NFPA 252 or UL 10B for vertical access doors and frames.
 - 2. ASTM E 119 or UL 263 for horizontal access doors and frames.

2.2 ACCESS DOORS AND FRAMES FOR WALLS AND CEILINGS

- A. Source Limitations: Obtain access doors and frames through one source from a single manufacturer.
- B. Basis of Design Product: Subject to compliance with requirements, provide product indicated, or comparable product by one of the following:

- 1. J. L. Industries, Inc.
 - 2. Larsen's Manufacturing Company.
 - 3. Milcor Inc.
 - 4. Nystrom, Inc.

- C. Flush Access Doors with Exposed Flanges:

- 1. **Basis-of-Design Product: Babcock Davis; Model BNT.**
 - 2. Assembly Description: Fabricate door to fit flush to frame. Provide manufacturer's standard-width exposed flange, proportional to door size.
 - 3. Locations: Wall and ceiling, gypsum board and masonry walls.
 - 4. Uncoated Steel Sheet for Door: Nominal 14 gage.
 - a. Finish: Factory prime.
 - 5. Frame Material: Nominal 16 gauge, factory prime.
 - 6. Hinges: concealed pivoting rod hinge.
 - 7. Hardware: Mortise cylinder preparation.
 - 8. Door Size: As required to access roof drain over flow piping.

- D. Fire-Rated, Flush Access Doors with Exposed Flanges:

1. **Basis-of-Design Product: Babcock Davis; BU-Series Model BUT.**

2. Assembly Description: Fabricate door to fit flush to frame, uninsulated. Provide self-latching door with automatic closer and interior latch release. Provide manufacturer's standard-width exposed flange, proportional to door size.
3. Locations: Wall and ceiling, gypsum board.
4. Fire-Resistance Rating: Not less than 1 hour.
5. Uncoated Steel Sheet for Door: Nominal 14 gage.
 - a. Finish: Factory prime.
6. Frame Material: Nominal 16 gauge, factory prime.
7. Hinges: concealed pivoting rod hinge.
8. Hardware: Mortise cylinder preparation.
9. Door Size: As required to access roof drain over flow piping.

E. Hardware:

1. Lock: Mortise cylinder.
 - a. Lock Preparation: Prepare door panel to accept cylinder. Cylinder to match other existing access panel doors

2.3 MATERIALS

- A. Steel Sheet: Uncoated cold-rolled steel sheet substrate complying with ASTM A 1008/A 1008M, Commercial Steel (CS), exposed.
- B. Stainless-Steel Sheet, Strip, Plate, and Flat Bars: ASTM A 666, Type 304. Remove tool and die marks and stretch lines or blend into finish.
- C. Drywall Beads: Edge trim formed from 0.0299-inch zinc-coated steel sheet formed to receive joint compound and in size to suit thickness of gypsum board.

2.4 FABRICATION

- A. General: Provide access door and frame assemblies manufactured as integral units ready for installation.
- B. Metal Surfaces: For metal surfaces exposed to view in the completed Work, provide materials with smooth, flat surfaces without blemishes. Do not use materials with exposed pitting, seam marks, roller marks, rolled trade names, or roughness.
- C. Doors and Frames: Grind exposed welds smooth and flush with adjacent surfaces. Furnish attachment devices and fasteners of type required to secure access panels to types of supports indicated.
 1. Exposed Flanges: As indicated.
 2. Provide mounting holes in frames for attachment of units to metal framing.
- D. Latching Mechanisms: Furnish number required to hold doors in flush plane when closed.

1. For cylinder lock, furnish two keys per lock and key all locks alike.

2.5 FINISHES

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.
- D. Steel and Metallic-Coated-Steel Finishes:
 1. Factory Prime: Apply manufacturer's standard, fast-curing, lead- and chromate-free, universal primer immediately after surface preparation and pretreatment.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Comply with manufacturer's written instructions for installing access doors and frames.
- B. Set frames accurately in position and attach securely to supports with plane of face panels aligned with adjacent finish surfaces.
- C. Install doors flush with adjacent finish surfaces or recessed to receive finish material.

3.2 ADJUSTING AND CLEANING

- A. Adjust doors and hardware after installation for proper operation.
- B. Remove and replace doors and frames that are warped, bowed, or otherwise damaged.

END OF SECTION 08 31 13

SECTION 09 01 20.91 – PLASTER REPAIR

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The Contractor, Subcontractors, and/or suppliers providing goods or services referenced in or related to this Section shall also be bound by the Documents identified in Division 01 Section “Summary”, Paragraph 1.1A, entitled “Related Documents.”

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Patching and repair of existing plaster. Openings created for accessing and installing roof drain piping.
- B. Related Sections:
 - 1. Division 09 Section “Painting” for painting plaster surfaces.
 - 2. Division 22 Section “Storm Drainage Piping Specialties” for roof drain piping.

1.3 UNIT PRICES

- A. Work of this Section is affected by unit prices specified in Division 01 Section "Unit Prices."
 - 1. Unit prices apply to additions to and deletions from Work as authorized by Change Orders.
 - 2. Perform the following work under unit prices and only as authorized. Authorized work includes work required by Drawings and the Specifications and work authorized in writing by Architect.
 - a. Patching and repair of existing plaster, in addition to locations indicated.
 - 3. Notify Architect and Project Manager weekly of extent of work performed that is attributable to unit prices.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.

1.5 QUALITY ASSURANCE

- A. Fire-Test-Response Characteristics: For portland cement plaster assemblies with fire-resistance ratings, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing and inspecting agency acceptable to authorities having jurisdiction.
- B. Mockups: Before plaster repair, install mockups of repairs in area of at least 100 sq. ft. to demonstrate aesthetic effects and set quality standards for materials and execution.
 - 1. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.
- C. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination."

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store materials inside under cover and keep them dry and protected against damage from weather, direct sunlight, surface contamination, corrosion, construction traffic, and other causes.

1.7 PROJECT CONDITIONS

- A. Comply with ASTM C 926 requirements.
- B. Interior Plasterwork: Maintain room temperatures at greater than 40 deg F for at least 48 hours before plaster application, and continuously during and after application.
 - 1. Avoid conditions that result in plaster drying out during curing period. Distribute heat evenly; prevent concentrated or uneven heat on plaster.
 - 2. Ventilate building spaces as required to remove water in excess of that required for hydrating plaster in a manner that prevents drafts of air from contacting surfaces during plaster application and until plaster is dry.

PART 2 - PRODUCTS

2.1 METAL LATH

- A. Expanded-Metal Lath: ASTM C 847 with ASTM A 653/A 653M, G60, hot-dip galvanized zinc coating.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Alabama Metal Industries Corporation (AMICO).
 - b. California Expanded Metal Products Company (CEMCO).
 - c. Clark Western Building Systems, a division of ClarkDietrich Building Systems.

2. Diamond-Mesh Lath: Flat and Self-furring, 3.4 lb/sq. yd.

2.2 ACCESSORIES

- A. General: Comply with ASTM C 1063 and coordinate depth of trim and accessories with thicknesses and number of plaster coats required.
- B. Zinc-Coated (Galvanized) Accessories:
 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Alabama Metal Industries Corporation (AMICO).
 - b. California Expanded Metal Products Company (CEMCO).
 - c. Clark Western Building Systems, a division of ClarkDietrich Building Systems.
 2. Cornerbeads: Fabricated from zinc-coated (galvanized) steel.
 3. Casing Beads: Fabricated from zinc-coated (galvanized) steel; square-edged style; with expanded flanges.
 4. Control Joints: Fabricated from zinc-coated (galvanized) steel; one-piece-type, folded pair of unperforated screeds in M-shaped configuration; with perforated flanges and removable protective tape on plaster face of control joint.
 5. Expansion Joints: Fabricated from zinc-coated (galvanized) steel; folded pair of unperforated screeds in M-shaped configuration; with expanded flanges.

2.3 MISCELLANEOUS MATERIALS

- A. Water for Mixing: Potable and free of substances capable of affecting plaster set or of damaging plaster, lath, or accessories.
- B. Bonding Compound: ASTM C 932.
- C. Steel Drill Screws: For metal-to-metal fastening, ASTM C 1002 or ASTM C 954, as required by thickness of metal being fastened; with pan head that is suitable for application; in lengths required to achieve penetration through joined materials of not fewer than three exposed threads.
- D. Fasteners for Attaching Metal Lath to Substrates: Complying with ASTM C 1063.
- E. Acoustical Sealant: As specified in Division 07 Section "Joint Sealants."

2.4 PLASTER MATERIALS

- A. Portland Cement: ASTM C 150, Type I.
 1. Color for Finish Coats: White.

- B. Lime: ASTM C 206, Type S; or ASTM C 207, Type S.
- C. Sand Aggregate: ASTM C 897.
 - 1. Color for Job-Mixed Finish Coats: White.

2.5 PLASTER MIXES

- A. General: Comply with ASTM C 926 for applications indicated.
- B. Base-Coat Mixes for Use over Metal Lath: Scratch and brown coats for three-coat plasterwork as follows:
 - 1. Portland Cement Mixes:
 - a. Scratch Coat: For cementitious material, mix 1 part portland cement and 3/4 to 1-1/2 parts lime. Use 2-1/2 to 4 parts aggregate per part of cementitious material (sum of separate volumes of each component material).
 - b. Brown Coat: For cementitious material, mix 1 part portland cement and 3/4 to 1-1/2 parts lime. Use 3 to 5 parts aggregate per part of cementitious material (sum of separate volumes of each component material).
- C. Base-Coat Mixes: Single base coats for two-coat plasterwork as follows (over existing masonry):
 - 1. Portland Cement Mix: For cementitious material, mix 1 part portland cement and 3/4 to 1-1/2 parts lime. Use 2-1/2 to 4 parts aggregate per part of cementitious material.
- D. Job-Mixed Finish-Coat Mixes:
 - 1. Portland Cement Mix: For cementitious materials, mix 1 part portland cement and 1-1/2 to 2 parts lime. Use 1-1/2 to 3 parts aggregate per part of cementitious material (sum of separate volumes of each component material).

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and substrates, with Installer present, and including welded hollow-metal frames, cast-in anchors, and structural framing, for compliance with requirements and other conditions affecting performance.
 - 1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Protect adjacent work from soiling, spattering, moisture deterioration, and other harmful effects caused by plastering.

3.3 INSTALLATION, GENERAL

- A. Sound Attenuation Blankets: Where required, install blankets before installing lath unless blankets are readily installed after lath has been installed on one side.
- B. Acoustical Sealant: Where required, seal joints between edges of plasterwork and abutting construction with acoustical sealant.

3.4 INSTALLING METAL LATH

- A. Expanded-Metal Lath: Install according to ASTM C 1063.
 - 1. Partition Framing and Vertical Furring: Install flat diamond-mesh lath.
 - 2. On Solid Surfaces, Not Otherwise Furred: Install self-furring, diamond-mesh lath.

3.5 INSTALLING ACCESSORIES

- A. Install according to ASTM C 1063 and at locations indicated on Drawings.
- B. Reinforcement for External Corners:
 - 1. Install cornerbead at interior locations.
- C. Control Joints: Install control joints at locations indicated on Drawings, and as follows:
 - 1. As required to delineate plasterwork into areas (panels) of the following maximum sizes:
 - a. Vertical Surfaces: 144 sq. ft.
 - b. Horizontal and other Nonvertical Surfaces: 100 sq. ft.
 - 2. At distances between control joints of not greater than 18 feet o.c.
 - 3. As required to delineate plasterwork into areas (panels) with length-to-width ratios of not greater than 2-1/2:1.
 - 4. Where control joints occur in surface of construction directly behind plaster.

3.6 PLASTER APPLICATION

- A. General: Comply with ASTM C 926.
 - 1. Do not deviate more than plus or minus 1/4 inch in 10 feet from a true plane in finished plaster surfaces, as measured by a 10-foot straightedge placed on surface.
 - 2. Provide plaster surfaces that are ready to receive field-applied finishes indicated.

- B. Bonding Compound: Apply on existing unit masonry plaster bases.
- C. Walls; Base-Coat Mixes for Use over Metal Lath: Scratch and brown coats for three-coat plasterwork; 3/4-inch thickness.
 - 1. Portland cement mixes.
- D. Plaster Finish Coats: Apply to provide float finish, to match existing adjacent surfaces.

3.7 CUTTING AND PATCHING

- A. Cut, patch, replace, and repair plaster as necessary to accommodate other work and to restore cracks, dents, and imperfections. Repair or replace work to eliminate blisters, buckles, crazing and check cracking, dry outs, efflorescence, sweat outs, and similar defects and where bond to substrate has failed.

3.8 PATCHING AND REPAIR OF EXISTING PLASTER

- A. Preparation: Scrape and sand existing plaster surfaces to be repaired. Remove all loose and peeling paint.
- B. Removal: Remove all existing plaster in area of repair that is loose, bubbled, crumbling or deteriorated. Make clean, sharp edges to bond new plaster.
- C. Install metal lath and accessories as required in areas of repair and patching.
- D. Apply new plaster and restore existing adjacent surfaces to a smooth finish.

3.9 CLEANING AND PROTECTION

- A. Remove temporary protection and enclosure of other work. Promptly remove plaster from doorframes, windows, and other surfaces not indicated to be plastered. Repair floors, walls, and other surfaces stained, marred, or otherwise damaged during plastering.

END OF SECTION 09 01 20.91

SECTION 09 21 16 - GYPSUM BOARD ASSEMBLIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The Contractor, Subcontractors, and/or suppliers providing goods or services referenced in or related to this Section shall also be bound by the Documents identified in Division 01 Section "Summary", Paragraph 1.1A, entitled "Related Documents."

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Non-load-bearing steel framing members for the following applications:
 - a. Interior framing systems (e.g., supports for partition walls).
 - 2. Interior gypsum board.
- B. Related Sections include the following:
 - 1. Division 06 Section "Miscellaneous Rough Carpentry" for wood blocking built into gypsum board assemblies.
 - 2. Division 07 Section "Thermal Insulation" for sound attenuation insulation installed in assemblies that incorporate gypsum board.
 - 3. Division 09 Section "Painting" for primers applied to gypsum board surfaces.
 - 4. Division 22 Section "Storm Drainage Piping Specialties" for overflow roof drain piping.
- C. Products installed, but not furnished, under this Section include the following:
 - 1. Access doors and frames, furnished by Fire Protection, Plumbing, Mechanical, and Electrical Subcontractors in accordance with Division 08 Section "Access Doors and Frames."

1.3 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Provide interior non-load-bearing metal framing capable of withstanding design loads within limits and under conditions indicated.
 - 1. Design Loads: In accordance with the Connecticut State Building Code.
 - 2. Deflection Limits: Design framing systems to withstand design loads without deflections greater than the following:
 - a. Interior Framing Systems:
 - 1) Maximum Deflection: L/240 at 5 psf, stud spacing at 16 inches o.c.

3. Design framing systems to provide for movement of framing members without damage or overstressing, sheathing failure, connection failure, undue strain on fasteners and anchors, or other detrimental effects when subject to a maximum ambient temperature change of 120 deg F.
4. Design framing system to maintain clearances at openings, to allow for construction tolerances, and to accommodate live load deflection of primary building structure as follows:

- a. Upward and downward movement of 3/4 inch.

- B. Cold-Formed Steel Framing, General: Design according to AISI's "Standard for Cold-Formed Steel Framing - General Provisions."

1. Provide interior framing systems sized to accommodate maximum deflection using limiting heights of metal studs without contribution of gypsum wallboard (non-composite).

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: Show layout, spacings, sizes, thicknesses, and types of cold-formed metal framing; fabrication; and fastening and anchorage details, including mechanical fasteners. Show reinforcing channels, opening framing, supplemental framing, strapping, bracing, bridging, splices, accessories, connection details, and attachment to adjoining work.
 1. For non-load-bearing metal framing indicated to comply with design loads, include structural analysis data signed and sealed by the qualified professional engineer licensed in the State of Connecticut responsible for their preparation.
 2. Include calculations for span capabilities of cold-formed metal framing for deflection criteria specified.
- C. Samples: For the following products:
 1. Trim Accessories: Full-size Sample in 12-inch- long length for each trim accessory indicated.
- D. Qualification Data: For professional engineer.
- E. Product Test Reports: From a qualified testing agency, unless otherwise stated, indicating that each of the following complies with requirements, based on evaluation of comprehensive tests for current products:
 1. Steel sheet.
 2. Expansion anchors.
 3. Power-actuated anchors.
 4. Mechanical fasteners.
- F. Research/Evaluation Reports: For cold-formed metal framing.

1.5 QUALITY ASSURANCE

- A. Engineering Responsibility: Preparation of Shop Drawings, design calculations, and other structural data by a qualified professional engineer.
- B. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in the State of Connecticut and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of cold-formed metal framing that are similar to those indicated for this Project in material, design, and extent.
- C. Testing Agency Qualifications: An independent testing agency, acceptable to authorities having jurisdiction, qualified according to ASTM E 329 to conduct the testing indicated.
- D. Product Tests: Mill certificates or data from a qualified independent testing agency indicating steel sheet complies with requirements, including base-metal thickness, yield strength, tensile strength, total elongation, chemical requirements, and metallic-coating thickness.
- E. AISI Specifications and Standards: Comply with AISI's "North American Specification for the Design of Cold-Formed Steel Structural Members" and its "Standard for Cold-Formed Steel Framing - General Provisions."
- F. Fire-Resistance-Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing agency.
- G. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 90 and classified according to ASTM E 413 by an independent testing agency.
- H. Mockups: Before beginning gypsum board installation, install mockups of at least 100 sq. ft. in surface area to demonstrate aesthetic effects and set quality standards for materials and execution.
 - 1. Install mockups for the following:
 - a. Each level of gypsum board finish indicated for use in exposed locations.
 - 2. Apply or install final decoration indicated, including painting and wallcoverings, on exposed surfaces for review of mockups.
 - 3. Simulate finished lighting conditions for review of mockups.
 - 4. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Protect cold-formed metal framing from corrosion, deformation, and other damage during delivery, storage, and handling.
- B. Store cold-formed metal framing, protect with a waterproof covering, and ventilate to avoid condensation.

- C. Store materials inside under cover and keep them dry and protected against damage from weather, condensation, direct sunlight, construction traffic, and other causes. Stack gypsum panels flat to prevent sagging.

1.7 PROJECT CONDITIONS

- A. Environmental Limitations: Comply with ASTM C 840 requirements or gypsum board manufacturer's written recommendations, whichever are more stringent.
- B. Do not install interior products until installation areas are enclosed and conditioned.
- C. Do not install panels that are wet, those that are moisture damaged, and those that are mold damaged.
 - 1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 - 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

PART 2 - PRODUCTS

2.1 COLD-FORMED STEEL FRAMING, GENERAL

- A. Manufacturers: Subject to compliance with requirements, provide cold-formed metal framing by one of the following:
 - 1. ClarkDietrich Building Systems.
 - 2. MarinoWare; a division of Ware Industries.
 - 3. SCAFCO Steel Stud Company.

2.2 INTERIOR NON-LOAD-BEARING STEEL FRAMING

- A. Interior Framing Members, General: Comply with ASTM C 645 for conditions indicated.
 - 1. Steel Sheet Components: Comply with ASTM C 645 requirements for metal unless otherwise indicated.
 - 2. Protective Coating: Comply with ASTM C 645; roll-formed from hot-dipped galvanized steel; complying with ASTM A 1003/A 1003M and ASTM A 653/A 653M G40 or having a coating that provides equivalent corrosion resistance. A40 galvanized products are not acceptable.
 - a. Coatings shall demonstrate equivalent corrosion resistance with an evaluation report acceptable to the authority having jurisdiction.
- B. Steel Studs and Runners: ASTM C 645.
 - 1. Non-Structural Studs: Cold-formed galvanized steel C-studs as per ASTM C 645 for conditions indicated below:

- a. Flange Size: 1-1/4-inch.
 - b. Web Depth: As indicated on Drawings.
 - 1) Minimum Thickness: 0.033 inch.
 - 2) Minimum Design Thickness: 0.0346 inch.
 - C. Slip-Type Head Joints: Where indicated, provide the following:
 - 1. Deflection Track: Slotted steel sheet top track manufactured to prevent cracking of finishes applied to interior partition framing resulting from deflection of structure above; in thickness not less than indicated for studs and in width to accommodate depth of studs.
 - D. Firestop Tracks: Top runner manufactured to allow partition heads to expand and contract with movement of the structure while maintaining continuity of fire-resistance-rated assembly indicated; in thickness not less than indicated for studs and in width to accommodate depth of studs.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. ClarkDietrich Building Systems; BlazeFrame.
 - b. Fire Trak Corp.; Fire Trak attached to studs with Fire Trak Posi Clips.
 - c. Metal-Lite, Inc.; The System.
 - d. Sliptrack Systems; SLP-TRK.
 - E. Hat-Shaped, Rigid Furring Channels: ASTM C 645.
 - 1. Minimum Design Thickness: 0.018 inch.
 - 2. Depth: 7/8 inch.
- 2.3 INTERIOR GYPSUM BOARD
- A. General: Complying with ASTM C 36 or ASTM C 1396, as applicable to type of gypsum board indicated and whichever is more stringent.
 - B. Size: Provide in maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.
 - C. Abuse-Resistant and Moisture- and Mold-Resistant Gypsum Board: Manufactured to produce greater resistance to surface indentation and abrasion than standard, regular-type and Type X gypsum board.
 - 1. Core: 5/8 inch, Type X.
 - 2. Long Edges: Tapered.
 - 3. Mold Resistance: ASTM D 3273, score of 10.
 - 4. Abuse-Resistant Performance: Comply with ASTM C 1629 and the following:
 - a. Surface Abrasion: ASTM D 4977 modified with 25 lbs of additional weight, 0.059" maximum (Level 2 minimum).

- b. Surface Indentation: ASTM D 5420, 0.10" maximum (Level 1).
 - c. Soft-Body Impact: ASTM E 695, surface failure at 195 ft.-lbs minimum (Level 2).
 - d. Hard-Body Impact: ASTM E 1629 Annex A.1, surface failure at 50 ft.-lbs minimum (Level 1).
- 5. Products: Subject to compliance with requirements, provide one of the following:
 - a. CertainTeed; AirRenew Extreme Abuse Resistant Gypsum Board.
 - b. Continental Building Products; Protecta AR 100.
 - c. National Gypsum Company; Gold Bond Hi-Abuse Brand XP Gypsum Board.
 - d. USG Corporation; Mold Tough AR Panels.
- D. Impact-Resistant and Moisture- and Mold-Resistant Gypsum Board: Manufactured to produce greater resistance to surface indentation and abrasion than standard, regular-type and Type X gypsum board, with a fiberglass mesh core.
 - 1. Core: 5/8 inch, Type X.
 - 2. Long Edges: Tapered.
 - 3. Mold Resistance: ASTM D 3273, score of 10.
 - 4. Abuse-Resistant Performance: Comply with ASTM C 1629 as follows:
 - a. Surface Abrasion: Level 3.
 - b. Surface Indentation: Level 1.
 - c. Soft-Body Impact: Level 3.
 - d. Hard-Body Impact: Level 3.
 - 5. Products: Subject to compliance with requirements, provide one of the following:
 - a. CertainTeed; AirRenew Extreme Impact Resistant Gypsum Board.
 - b. Continental Building Products; Protecta HIR 300.
 - c. National Gypsum Company; Gold Bond Hi-Impact XP Gypsum Board.
 - d. USG Corporation; Mold Tough VHI Abuse-Resistant Interior Panels.

2.4 TRIM ACCESSORIES

- A. Interior Trim: ASTM C 1047.
 - 1. Material: Galvanized or aluminum-coated steel sheet, rolled zinc, plastic, or paper-faced galvanized steel sheet.
 - 2. Shapes:
 - a. Cornerbead.
 - b. LC-Bead: J-shaped; exposed long flange receives joint compound.
 - c. U-Bead: J-shaped; exposed short flange does not receive joint compound.
 - d. Expansion (control) joint.

2.5 JOINT TREATMENT MATERIALS

- A. General: Comply with ASTM C 475/C 475M.

- B. Joint Tape:
 - 1. Interior Gypsum Wallboard: Paper.
- C. Joint Compound for Interior Gypsum Wallboard: For each coat use formulation that is compatible with other compounds applied on previous or for successive coats.
 - 1. Prefilling: At open joints and damaged surface areas, use setting-type taping compound.
 - 2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use setting-type taping compound.
 - a. Use setting-type compound for installing paper-faced metal trim accessories.
 - 3. Fill Coat: For second coat, use drying-type, all-purpose compound.
 - 4. Finish Coat: For third coat, use drying-type, all-purpose compound.

2.6 AUXILIARY MATERIALS

- A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written recommendations.
- B. Sound Attenuation Blankets: As specified in Division 07 Section "Thermal Insulation."
 - 1. Fire-Resistance-Rated Assemblies: Comply with mineral-fiber requirements of assembly.
- C. Acoustical Sealant: As specified in Division 07 Section "Joint Sealants."

2.7 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and manufacture.
 - 1. Fasteners for Metal Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.
- B. Steel Drill Screws: ASTM C 1002, unless otherwise indicated.
 - 1. Use screws complying with ASTM C 954 for fastening panels to steel members from 0.033 to 0.112 inch thick.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and substrates, with Installer present, and including welded hollow-metal frames, cast-in anchors, and structural framing, for compliance with requirements and other conditions affecting performance.

- B. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.
- C. Proceed with installation only after unsatisfactory conditions have been corrected. Commencement of work indicates acceptance of areas and substrates.

3.2 INSTALLATION, GENERAL

- A. Installation Standard: ASTM C 754, except comply with framing sizes and spacing indicated.
 - 1. Gypsum Board Assemblies: Also comply with requirements in ASTM C 840 that apply to framing installation.
- B. Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction.
- C. Install bracing at terminations in assemblies.
- D. Do not bridge building control and expansion joints with non-load-bearing steel framing members. Frame both sides of joints independently.

3.3 INTERIOR NON-LOAD-BEARING WALL INSTALLATION

- A. Install studs so flanges within framing system point in same direction.
 - 1. Space studs for all applications at 16 inches o.c., unless otherwise indicated.
- B. Install tracks (runners) at floors and overhead supports. Extend framing full height to structural supports or substrates above suspended ceilings, except where partitions are indicated to terminate at suspended ceilings. Continue framing around ducts penetrating partitions above ceiling.
 - 1. Slip-Type Head Joints: Where framing extends to overhead structural supports, install to produce joints at tops of framing systems that prevent axial loading of finished assemblies.
 - 2. Door Openings: Screw vertical studs at jambs to jamb anchor clips on door frames; install runner track section (for cripple studs) at head and secure to jamb studs.
 - a. Install two studs at each jamb, unless otherwise indicated.
 - b. Install cripple studs at head adjacent to each jamb stud, with a minimum 1/2-inch clearance from jamb stud to allow for installation of control joint in finished assembly.
 - c. Extend jamb studs through suspended ceilings and attach to underside of overhead structure.
 - 3. Other Framed Openings: Frame openings other than door openings the same as required for door openings, unless otherwise indicated. Install framing below sills of openings to match framing required above door heads.

- 4. Fire-Resistance-Rated Partitions: Install framing to comply with fire-resistance-rated assembly indicated and support closures and to make partitions continuous from floor to underside of solid structure.
 - a. Firestop Track: Where indicated, install to maintain continuity of fire-resistance-rated assembly indicated.
- 5. Sound-Rated Partitions: Install framing to comply with sound-rated assembly indicated.
- C. Direct Furring:
 - 1. Attach to concrete or masonry with stub nails, screws designed for masonry attachment, or powder-driven fasteners spaced 24 inches o.c.
- D. Installation Tolerance: Install each framing member so fastening surfaces vary not more than 1/8 inch from the plane formed by faces of adjacent framing.

3.4 APPLYING AND FINISHING PANELS, GENERAL

- A. Comply with ASTM C 840.
- B. Install ceiling panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.
- C. Install panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1/16 inch of open space between panels. Do not force into place.
- D. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.
- E. Form control and expansion joints with space between edges of adjoining gypsum panels.
- F. Cover both faces of support framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases braced internally.
 - 1. Unless concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. in area.
 - 2. Fit gypsum panels around ducts, pipes, and conduits.
 - 3. Where partitions intersect structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by structural members; allow 1/4- to 3/8-inch- wide joints to install sealant.
- G. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments, except floors. Provide 1/4- to 1/2-inch- wide spaces at these locations, and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.

- H. Attachment to Steel Framing: Attach panels so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.
- I. STC-Rated Assemblies: Seal construction at perimeters, behind control joints, and at openings and penetrations with a continuous bead of acoustical sealant. Install acoustical sealant at both faces of partitions at perimeters and through penetrations. Comply with ASTM C 919 and with manufacturer's written recommendations for locating edge trim and closing off sound-flanking paths around or through assemblies, including sealing partitions above acoustical ceilings.

3.5 APPLYING INTERIOR GYPSUM BOARD

- A. Install interior gypsum board in the following locations:
 - 1. Abuse-Resistant Type: Typical, walls.
 - 2. Impact Resistant Type: Walls, Lower Level Passage 013AC.
 - 3. Glass-Mat, Water-Resistant Backing Board: At all locations indicated to receive tile, furnished and installed by Division 09 Section "Tiling."
- B. Single-Layer Application:
 - 1. On ceilings, apply gypsum panels before wall/partition board application to greatest extent possible and at right angles to framing, unless otherwise indicated.
 - 2. On partitions/walls, apply gypsum panels either vertically (parallel to framing) or horizontally (perpendicular to framing), unless otherwise indicated or required by fire-resistance-rated assembly, and minimize end joints.
 - a. Stagger abutting end joints not less than one framing member in alternate courses of panels.
 - b. At stairwells and other high walls, install panels horizontally, unless otherwise indicated or required by fire-resistance-rated assembly.
 - 3. Fastening Methods: Apply gypsum panels to supports with steel drill screws.
- C. Multilayer Application:
 - 1. On ceilings, apply gypsum board indicated for base layers before applying face layers on walls/partitions; apply face layers in same sequence. Apply base layers at right angles to framing members and offset face-layer joints 1 framing member, 16 inches minimum, from parallel base-layer joints, unless otherwise indicated or required by fire-resistance-rated assembly.
 - 2. On partitions/walls, apply gypsum board indicated for base layers and face layers vertically (parallel to framing) with joints of base layers located over stud or furring member and face-layer joints offset at least one stud or furring member with base-layer joints, unless otherwise indicated or required by fire-resistance-rated assembly. Stagger joints on opposite sides of partitions.
 - 3. Fastening Methods: Fasten base layers and face layers separately to supports with screws.

3.6 INSTALLING TRIM ACCESSORIES

- A. General: For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.
- B. Control Joints: Install control joints at locations indicated on Drawings, or if not indicated, according to ASTM C 840 and in specific locations approved by Architect for visual effect.
- C. Interior Trim: Install in the following locations:
 - 1. Cornerbead: Use at outside corners.
 - 2. LC-Bead: Use at exposed panel edges.

3.7 FINISHING GYPSUM BOARD

- A. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.
- B. Prefill open joints and damaged surface areas.
- C. Apply joint tape over gypsum board joints, except those with trim having flanges not intended for tape.
- D. Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C 840:
 - 1. Level 1: Ceiling plenum areas, concealed areas, and where indicated.
 - 2. Level 4: At panel surfaces that will be exposed to view, unless otherwise indicated.

3.8 PROTECTION

- A. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.
- B. Remove and replace panels that are wet, moisture damaged, and mold damaged.
 - 1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 - 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION 09 21 16

SECTION 09 51 13 - ACOUSTICAL PANEL CEILINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The Contractor, Subcontractors, and/or suppliers providing goods or services referenced in or related to this Section shall also be bound by the Documents identified in Division 01 Section “Summary”, Paragraph 1.1A, entitled “Related Documents.”

1.2 SUMMARY

- A. Section includes:
 - 1. Acoustical panels and exposed suspension systems for ceiling restoration as a result of installing and accessing roof drain piping.
- B. Related Sections include the following:
 - 1. Division 07 Section “Joint Sealants” for acoustical sealants furnished and installed by this Section in acoustical panel ceiling assemblies.
 - 2. Division 22 Section “Storm Drainage Piping Specialties” for overflow roof drain piping.

1.3 DEFINITIONS

- A. CAC: Ceiling Attenuation Class.
- B. LR: Light Reflectance coefficient.
- C. NRC: Noise Reduction Coefficient.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Samples for Verification: For each component indicated and for each exposed finish required, prepared on Samples of size indicated below.
 - 1. Acoustical Panel: Set of 6-inch- square Samples of each type, color, pattern, and texture.
 - 2. Exposed Suspension System Members, Moldings, and Trim: Set of 12-inch- long Samples of each type, finish, and color.
- C. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for each acoustical panel ceiling.

- D. Research/Evaluation Reports: For each acoustical panel ceiling and components.
- E. Maintenance Data: For finishes to include in maintenance manuals.
- F. Warranties: Special warranties specified in this Section.

1.5 QUALITY ASSURANCE

- A. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
 - 1. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.
- B. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination."

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver acoustical panels, suspension system components, and accessories to Project site in original, unopened packages and store them in a fully enclosed, conditioned space where they will be protected against damage from moisture, humidity, temperature extremes, direct sunlight, surface contamination, and other causes.
- B. Before installing acoustical panels, permit them to reach room temperature and a stabilized moisture content.
- C. Handle acoustical panels carefully to avoid chipping edges or damaging units in any way.

1.7 PROJECT CONDITIONS

- A. Environmental Limitations: Do not install acoustical panel ceilings until spaces are enclosed and weatherproof, wet work in spaces is complete and dry, work above ceilings is complete, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.

1.8 COORDINATION

- A. Coordinate layout and installation of acoustical panels and suspension system with other construction that penetrates ceilings or is supported by them, including light fixtures, HVAC equipment, and partition assemblies.

1.9 EXTRA MATERIALS

- A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Acoustical Ceiling Panels: Full-size panels equal to 2 percent of quantity installed, for each ceiling panel type.
2. Suspension System Components: Quantity of each exposed component equal to 2 percent of quantity installed, for each suspension system type.

1.10 WARRANTY

- A. Special Warranty for Acoustical Panel Ceilings and Suspension Systems: Manufacturer's standard form in which manufacturer agrees to replace acoustical panel ceilings and suspension systems that fail in materials or workmanship within specified warranty period.
 1. Failure of ceiling panels includes sagging and warping, and growth of mold, mildew and stain causing bacteria.
 2. Failure of suspension systems includes rusting.
 3. Warranty does not cover damages that may occur from vibrations, fire, water, freezing temperatures, accident or any form of abuse or exposure to abnormal conditions.
 4. Warranty Period: 30 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Seismic Performance: Acoustical ceiling shall withstand the effects of earthquake motions determined according to ASCE/SEI 7 and the Connecticut State Building Code.
- B. Surface-Burning Characteristics: Comply with ASTM E 84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
 1. Flame-Spread Index: Comply with ASTM E 1264 for Class A materials.
 2. Smoke-Developed Index: 450 or less.

2.2 ACOUSTICAL PANELS, GENERAL

- A. Source Limitations: Obtain each type of acoustical ceiling panel and supporting suspension system from single source from single manufacturer.
- B. Glass-Fiber-Based Panels: Made with binder containing no urea formaldehyde.
- C. Acoustical Panel Standard: Provide manufacturer's standard panels of configuration indicated that comply with ASTM E 1264 classifications as designated by types, patterns, acoustical ratings, and light reflectances, unless otherwise indicated.
 1. Mounting Method for Measuring NRC: Type E-400; plenum mounting in which face of test specimen is 15-3/4 inches away from test surface per ASTM E 795.

- D. Antimicrobial Fungicide Treatment: Provide acoustical panels with face and back surfaces coated with antimicrobial treatment consisting of manufacturer's standard formulation with fungicide added to inhibit growth of mold and mildew and showing no mold or mildew growth when tested according to ASTM D 3273 and evaluated according to ASTM D 3274 or ASTM G 21.

2.3 ACOUSTICAL PANELS FOR ACOUSTICAL PANEL CEILING

- A. Basis-of-Design Product: Subject to compliance with requirements, provide products as indicated by **Armstrong World Industries, Inc.** or a comparable product by one of the following:
1. CertainTeed, Inc.
 2. Rockfon.
 3. USG Interiors, Inc.
- B. Classification: Provide panels complying with ASTM E 1264 for type, form, and pattern as follows:
1. **Ceiling Type:**
 - a. Basis of Design Product: **Armstrong World Industries, Inc.; Cortega #769.**
 - 1) Type and Form: Type III, mineral base with painted finish; Form 2, water felted.
 - 2) Pattern: CD (perforated, small holes and fissured).
 - 3) Color: White.
 - 4) LR: Not less than 0.82.
 - 5) NRC: Not less than 0.75.
 - 6) CAC: Not less than 35.
 - 7) Fire Rating: Class A.
 - 8) Edge/Joint Detail: Square.
 - 9) Thickness: 5/8 inch.
 - 10) Modular Size: 24 by 48 inches.
 - 11) Antimicrobial Treatment: BioBlock + and HumiGuard Plus.
- C. Broad Spectrum Antimicrobial Fungicide and Bactericide Treatment: Provide acoustical panels treated with manufacturer's standard antimicrobial formulation that inhibits fungus, mold, mildew, and gram-positive and gram-negative bacteria and showing no mold, mildew, or bacterial growth when tested according to ASTM D 3273 and evaluated according to ASTM D 3274 or ASTM G 21.

2.4 METAL SUSPENSION SYSTEMS, GENERAL

- A. Metal Suspension System Standard: Provide manufacturer's standard direct-hung metal suspension systems of types, structural classifications, and finishes indicated that comply with applicable requirements in ASTM C 635.

- B. Finishes and Colors, General: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes. Provide manufacturer's standard factory-applied finish for type of system indicated.
- C. Attachment Devices: Size for five times the design load indicated in ASTM C 635, Table 1, "Direct Hung," unless otherwise indicated. Comply with seismic design requirements.
- D. Wire Hangers, Braces, and Ties: Provide wires complying with the following requirements:
 - 1. Zinc-Coated, Carbon-Steel Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper.
 - 2. Size: Select wire diameter so its stress at 3 times hanger design load (ASTM C 635, Table 1, "Direct Hung") will be less than yield stress of wire, but provide not less than 0.106-inch- diameter wire.
- E. Hanger Rods: Mild steel, zinc coated or protected with rust-inhibitive paint.
- F. Seismic Stabilizer Bars: Manufacturer's standard perimeter stabilizers designed to accommodate seismic forces.
- G. Seismic Struts: Manufacturer's standard compression struts designed to accommodate seismic forces.
- H. Seismic Clips: Manufacturer's standard seismic clips designed and spaced to secure acoustical panels in-place.

2.5 METAL SUSPENSION SYSTEM FOR ACOUSTICAL PANEL CEILING

- A. Wide-Face, Capped, Double-Web, Hot-Dip Galvanized, G30, Steel Suspension System: Main and cross runners roll formed from cold-rolled steel sheet, hot-dip galvanized according to ASTM A 653/A 653M, G30 coating designation, with prefinished, cold-rolled, 15/16-inch-wide, metal caps on flanges.
 - 1. Basis-of-Design Product: Subject to compliance with requirements, provide **Armstrong World Industries, Inc.; Prelude XL 15/16" Exposed Tee System** or a comparable product by one of the following:
 - a. CertainTeed; 15/16" Classic Stab System.
 - b. Rockfon/Chicago Metallic; 15/16" Suspension.
 - c. USG Interiors, Inc.; Donn DX/DXL.
 - 2. Structural Classification: Intermediate duty system.
 - 3. Face Design: Flat, flush.
 - 4. Face Finish: White, typical.

2.6 METAL EDGE MOLDINGS AND TRIM

- A. Roll-Formed, Sheet-Metal Edge Moldings and Trim: Type and profile indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations that comply with seismic design requirements; formed from sheet metal of same material, finish, and color as that used for exposed flanges of suspension system runners.
 - 1. Provide manufacturer's standard edge moldings that fit acoustical panel edge details and suspension systems indicated and that match width and configuration of exposed runners, unless otherwise indicated.

2.7 ACOUSTICAL SEALANT

- A. Products: Comply with Division 07 Section "Joint Sealants."

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, including structural framing to which acoustical panel ceilings attach or abut, with Installer present, for compliance with requirements specified in this and other Sections that affect ceiling installation and anchorage and with requirements for installation tolerances and other conditions affecting performance of acoustical panel ceilings.
 - 1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Measure each ceiling area and establish layout of acoustical panels to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width panels at borders, and comply with layout shown on reflected ceiling plans.

3.3 INSTALLATION

- A. General: Install acoustical panel ceilings to comply with ASTM C 636 and seismic design requirements indicated, per manufacturer's written instructions and CISCA's "Ceiling Systems Handbook."
- B. Suspend ceiling hangers from building's structural members and as follows:
 - 1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structure or of ceiling suspension system.
 - 2. Splay hangers only where required to miss obstructions; offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.

3. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with location of hangers at spacings required to support standard suspension system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices.
 4. Secure wire hangers to ceiling suspension members and to supports above with a minimum of three tight turns. Connect hangers directly either to structures or to inserts, eye screws, or other devices that are secure and appropriate for substrate and that will not deteriorate or otherwise fail due to age, corrosion, or elevated temperatures.
 5. Secure flat, angle, channel, and rod hangers to structure, including intermediate framing members, by attaching to inserts, eye screws, or other devices that are secure and appropriate for both structure to which hangers are attached and type of hanger involved. Install hangers in a manner that will not cause them to deteriorate or fail due to age, corrosion, or elevated temperatures.
 6. Do not support ceilings directly from permanent metal forms or floor deck. Fasten hangers to cast-in-place hanger inserts, postinstalled mechanical or adhesive anchors, or power-actuated fasteners that extend through forms into concrete.
 7. When steel framing does not permit installation of hanger wires at spacing required, install carrying channels or other supplemental support for attachment of hanger wires.
 8. Do not attach hangers to steel deck tabs.
 9. Do not attach hangers to steel roof deck. Attach hangers to structural members.
 10. Space hangers not more than 48 inches o.c. along each member supported directly from hangers unless otherwise indicated; provide hangers not more than 8 inches from ends of each member.
 11. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards and publications.
- C. Secure bracing wires to ceiling suspension members and to supports with a minimum of four tight turns. Suspend bracing from building's structural members as required for hangers, without attaching to permanent metal forms, steel deck, or steel deck tabs. Fasten bracing wires into concrete with cast-in-place or postinstalled anchors.
- D. Install edge moldings and trim of type indicated at perimeter of acoustical ceiling area and where necessary to conceal edges of acoustical panels.
1. Apply acoustical sealant in a continuous ribbon concealed on back of vertical legs of moldings before they are installed.
 2. Screw attach moldings to substrate at intervals not more than 16 inches o.c. and not more than 3 inches from ends, leveling with ceiling suspension system to a tolerance of 1/8 inch in 12 feet. Miter corners accurately and connect securely.
 - a. Install moldings in one piece at all walls 12 feet or less in length. Minimize quantity of pieces at longer walls.
 - b. Use factory edges where joining lengths of molding. Abut moldings where joined; do not overlap.
 3. Do not use exposed fasteners, including pop rivets, on moldings and trim.
- E. Install suspension system runners so they are square and securely interlocked with one another. Remove and replace dented, bent, or kinked members.

- F. Install acoustical panels with undamaged edges and fit accurately into suspension system runners and edge moldings. Scribe and cut panels at borders and penetrations to provide a neat, precise fit.
 - 1. For square-edged panels, install panels with edges fully hidden from view by flanges of suspension system runners and moldings.
 - 2. Install hold-down clips in areas indicated.

3.4 CLEANING

- A. Clean exposed surfaces of acoustical panel ceilings, including trim, edge moldings, and suspension system members. Comply with manufacturer's written instructions for cleaning and touchup of minor finish damage. Remove and replace ceiling components that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION 09 51 13

SECTION 099123 – INTERIOR PAINTING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Interior high-performance paint and coatings systems including surface preparation. For restoration of areas affected by accessing and installing roof drain piping.

1.2 RELATED SECTIONS

- A. Section 09 01 20.91 – Plaster Repair.
- B. Section 09 21 16 – Gypsum Board Assemblies.
- C. Division 22 - Section “Storm Drainage Piping Specialties” for overflow roof drain piping.

1.3 SUMMARY

- A. This section includes the following:
 - 1. Interior coating system as shown on the contract drawings and in finish schedules.

1.4 REFERENCES

- A. Material Safety Data Sheets / Environmental Data Sheets: Per manufacturer's MSDS/EDS for specific VOCs (calculated per 40 CFR 59.406). VOCs may vary by base and sheen.
- B. South Coast Air Quality Management District (SCAQMD): Rule 1113 - Architectural Coatings.
- C. Green Seal, Inc.:
 - 1. GS-11 Standard for Paints and Coatings (1st Edition, May 20,1993).
 - 2. GC-03 - Environmental Criteria for Anti-Corrosive Paints.
- D. United States Green Building Council (USGBC): LEED-09 NC/CI/CS.

1.5 SUBMITTALS

- A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
- B. Product Data: For each paint system indicated, including.
 - 1. Product characteristics.
 - 2. Surface preparation instructions and recommendations.
 - 3. Primer requirements and finish specification.
 - 4. Storage and handling requirements and recommendations.
 - 5. Application methods.
 - 6. Cautions for storage, handling and installation.
- C. Selection Samples: Submit a complete set of color chips that represent the full range of manufacturer's products, colors and sheens available.
- D. Verification Samples: For each finish product specified, submit samples that represent actual product, color, and sheen.

- E. Only submit complying products based on project requirements (i.e. LEED). One must also comply with the regulations regarding VOCs (CARB, OTC, SCAQMD, LADCO). To ensure compliance with district regulations and other rules, businesses that perform coating activities should contact the local district in each area where the coating will be used.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: A firm or individual experienced in applying paints and coatings similar in material, design, and extent to those indicated for this Project, whose work has resulted in applications with a record of successful in-service performance.
- B. Paint exposed surfaces. If a color of finish, or a surface is not specifically mentioned, Architect will select from standard products, colors and sheens available.
- C. Do not paint concealed surfaces, operating parts, and labels unless indicated.
- D. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
 - 1. Finish surfaces for verification of products, colors and sheens.
 - 2. Finish area designated by Architect.
 - 3. Provide samples that designate primer and finish coats.
 - 4. Do not proceed with remaining work until the Architect approves the mock-up.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver manufacturer's unopened containers to the work site. Packaging shall bear the manufacturer's name, label, and the following list of information.
 - 1. Product name, and type (description).
 - 2. Application and use instructions.
 - 3. Surface preparation.
 - 4. VOC content.
 - 5. Environmental handling.
 - 6. Batch date.
 - 7. Color number.
- B. Storage: Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.
- C. Store materials in an area that is within the acceptable temperature range, per manufacturer's instructions. Protect from freezing.
- D. Handling: Maintain a clean, dry storage area, to prevent contamination or damage to the coatings.

1.8 PROJECT CONDITIONS

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

1.9 EXTRA MATERIALS

- A. Furnish extra paint materials from the same production run as the materials applied and in the quantities described below. Package with protective covering for storage and identify with labels describing contents. Deliver extra materials to Owner.
- B. Furnish Owner with an additional one percent of each material and color, but not less than 1 gal (3.8 l) or 1 case, as appropriate.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Basis of Design Acceptable Manufacturer: Sherwin-Williams, which is located at: 101 Prospect Ave.; Cleveland, OH 44115; Toll Free Tel: 800-524-5979; Tel: 216-566-2000; Fax: 440-826-1989; Email: request info specifications@sherwin.com; Web: www.swspecs.com.

Other Acceptable Manufacturers:

- 1. PPG Industries
- 2. Benjamin Moore

2.2 APPLICATIONS/SCOPE

- A. Interior High Performance Paints and Coatings:
 - 1. Drywall: Drywall board, Gypsum board
 - 2. Plaster: Ceilings.

2.3 PAINT MATERIALS - GENERAL

- A. Paints and Coatings:
 - 1. Unless otherwise indicated, provide factory-mixed coatings. When required, mix coatings to correct consistency in accordance with manufacturer's instructions before application. Do not reduce, thin, or dilute coatings or add materials to coatings unless such procedure is specifically described in manufacturer's product instructions.
 - 2. For opaque finishes, tint each coat including primer coat and intermediate coats, one-half shade lighter than succeeding coat, with final finish coat as base color. Or follow manufacturer's product instructions for optimal color conformance.
- B. Primers: Where the manufacturer offers options on primers for a particular substrate, use primer categorized as "best" by the manufacturer.
- C. Coating Application Accessories: Provide all primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials required, per manufacturer's specifications.
- D. Color: Refer to Finish Schedule for paint colors, and as selected.

2.4 HIGH PERFORMANCE INTERIOR PAINT SYSTEMS

- A. DRYWALL - (Ceilings).
 - 1. Refer to Contract Drawings for paint manufacturer and type, follow manufacturer's recommended paint systems based on the selection and material to be painted.
- B. PLASTER - (Ceilings)
 - 1. Refer to Contract Drawings for paint manufacturer and type, follow manufacturer's

recommended paint systems based on the selection and material to be painted.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared; notify Architect of unsatisfactory conditions before proceeding. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- B. Proceed with work only after conditions have been corrected and approved by all parties, otherwise application of coatings will be considered as an acceptance of surface conditions.
- C. Previously Painted Surfaces: Verify that existing painted surfaces do not contain lead based paints, notify Architect immediately if lead based paints are encountered.

3.2 SURFACE PREPARATION

- A. General: Surfaces shall be dry and in sound condition. Remove oil, dust, dirt, loose rust, peeling paint or other contamination to ensure good adhesion.
 - 1. Prior to attempting to remove mildew, it is recommended to test any cleaner on a small, inconspicuous area prior to use. Bleach and bleaching type cleaners may damage or discolor existing paint films. Bleach alternative cleaning solutions are advised.
 - 2. Remove mildew before painting by washing with a solution of 1 part liquid household bleach and 3 parts of warm water. Apply the solution and scrub the mildewed area. Allow the solution to remain on the surface for 10 minutes. Rinse thoroughly with clean water and allow the surface to dry before painting. Wear protective glasses or goggles, waterproof gloves, and protective clothing. Quickly wash off any of the mixture that comes in contact with your skin. Do not add detergents or ammonia to the bleach/water solution.
 - 3. Remove items including but not limited to thermostats, electrical outlets, switch covers and similar items prior to painting. After completing painting operations in each space or area, reinstall items removed using workers skilled in the trades involved.
 - 4. No exterior painting should be done immediately after a rain, during foggy weather, when rain is predicted, or when the temperature is below 50 degrees F (10 degrees C), unless products are designed specifically for these conditions. On large expanses of metal siding, the air, surface and material temperatures must be 50 degrees F (10 degrees F) or higher to use low temperature products.
- B. Drywall - Interior: Must be clean and dry. All nail heads must be set and spackled. Joints must be taped and covered with a joint compound. Spackled nail heads and tape joints must be sanded smooth and all dust removed prior to painting.
- C. Plaster: Must be allowed to dry thoroughly for at least 30 days before painting, unless the products are designed to be used in high pH environments. Room must be ventilated while drying; in cold, damp weather, rooms must be heated. Damaged areas must be repaired with an appropriate patching material. Bare plaster must be cured and hard. Textured, soft,

porous, or powdery plaster should be treated with a solution of 1 pint household vinegar to 1 gallon of water. Repeat until the surface is hard, rinse with clear water and allow to dry.

3.3 INSTALLATION

- A. Apply all coatings and materials with the manufacturer's specifications in mind. Mix and thin coatings according to manufacturer's recommendations.
- B. Do not apply to wet or damp surfaces. Wait at least 30 days before applying to new concrete or masonry. Or follow manufacturer's procedures to apply appropriate coatings prior to 30 days. Test new concrete for moisture content. Wait until wood is fully dry after rain or morning fog or dew.
- C. Apply coatings using methods recommended by manufacturer.
- D. Uniformly apply coatings without runs, drips, or sags, without brush marks, and with consistent sheen.
- E. Apply coatings at spreading rate required to achieve the manufacturers recommended dry film thickness.
- F. Regardless of number of coats specified, apply as many coats as necessary for complete hide, and uniform appearance.
- G. Inspection: The coated surface must be inspected and approved by the Architect just prior to the application of each coat.

3.4 PROTECTION

- A. Protect finished coatings from damage until completion of project.
- B. Touch-up damaged coatings after substantial completion, following manufacturer's recommendation for touch up or repair of damaged coatings. Repair any defects that will hinder the performance of the coatings.

END OF SECTION

SECTION 220529 - HANGERS AND SUPPORTS FOR PLUMBING PIPING AND EQUIPMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Metal pipe hangers and supports.
 - 2. Trapeze pipe hangers.
 - 3. Thermal-hanger shield inserts.
 - 4. Fastener systems.
 - 5. Equipment supports.

1.3 DEFINITIONS

- A. MSS: Manufacturers Standardization Society of The Valve and Fittings Industry Inc.

1.4 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Design trapeze pipe hangers and equipment supports, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.
- B. Structural Performance: Hangers and supports for plumbing piping and equipment shall withstand the effects of gravity loads and stresses within limits and under conditions indicated according to ASCE/SEI 7.
 - 1. Design supports for multiple pipes, including pipe stands, capable of supporting combined weight of supported systems, system contents, and test water.
 - 2. Design equipment supports capable of supporting combined operating weight of supported equipment and connected systems and components.
 - 3. Design seismic-restraint hangers and supports for piping and equipment and obtain approval from authorities having jurisdiction.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: Show fabrication and installation details and include calculations for the following; include Product Data for components:
 - 1. Trapeze pipe hangers.
 - 2. Equipment supports.
- C. Delegated-Design Submittal: For trapeze hangers indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
 - 1. Detail fabrication and assembly of trapeze hangers.

INFORMATIONAL SUBMITTALS

- D. Welding certificates.

1.6 QUALITY ASSURANCE

- A. Structural Steel Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."

PART 2 - PRODUCTS

2.1 METAL PIPE HANGERS AND SUPPORTS

- A. Carbon-Steel Pipe Hangers and Supports:
 - 1. Description: MSS SP-58, Types 1 through 58, factory-fabricated components.
 - 2. Galvanized Metallic Coatings: Pregalvanized or hot dipped.
 - 3. Nonmetallic Coatings: Plastic coating, jacket, or liner.
 - 4. Padded Hangers: Hanger with fiberglass or other pipe insulation pad or cushion to support bearing surface of piping.
 - 5. Hanger Rods: Continuous-thread rod, nuts, and washer made of carbon steel.

2.2 TRAPEZE PIPE HANGERS

- A. Description: MSS SP-69, Type 59, shop- or field-fabricated pipe-support assembly made from structural carbon-steel shapes with MSS SP-58 carbon-steel hanger rods, nuts, saddles, and U-bolts.

2.3 THERMAL-HANGER SHIELD INSERTS

- 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. Carpenter & Paterson, Inc.
 - 2. Clement Support Services.
 - 3. ERICO International Corporation.
 - 4. National Pipe Hanger Corporation.
 - 5. PHS Industries, Inc.
 - 6. Pipe Shields, Inc.; a subsidiary of Piping Technology & Products, Inc.
 - 7. Piping Technology & Products, Inc.
 - 8. Rilco Manufacturing Co., Inc.
 - 9. Value Engineered Products, Inc.
- B. For Trapeze or Clamped Systems: Insert and shield shall cover entire circumference of pipe.
- C. For Clevis or Band Hangers: Insert and shield shall cover lower 180 degrees of pipe.
- D. Insert Length: Extend 2 inches beyond sheet metal shield for piping operating below ambient air temperature.

2.4 FASTENER SYSTEMS

- A. Mechanical-Expansion Anchors: Insert-wedge-type, zinc-coated steel anchors, for use in hardened portland cement concrete; with pull-out, tension, and shear capacities appropriate for supported loads and building materials where used.

2.5 EQUIPMENT SUPPORTS

- A. Description: Welded, shop- or field-fabricated equipment support made from structural carbon-steel shapes.

2.6 MISCELLANEOUS MATERIALS

- A. Structural Steel: ASTM A 36/A 36M, carbon-steel plates, shapes, and bars; black and galvanized.
- B. Grout: ASTM C 1107, factory-mixed and -packaged, dry, hydraulic-cement, nonshrink and nonmetallic grout; suitable for interior and exterior applications.
 - 1. Properties: Nonstaining, noncorrosive, and nongaseous.
 - 2. Design Mix: 5000-psi, 28-day compressive strength.

PART 3 - EXECUTION

3.1 HANGER AND SUPPORT INSTALLATION

- A. Metal Pipe-Hanger Installation: Comply with MSS SP-69 and MSS SP-89. Install hangers, supports, clamps, and attachments as required to properly support piping from the building structure.
- B. Metal Trapeze Pipe-Hanger Installation: Comply with MSS SP-69 and MSS SP-89. Arrange for grouping of parallel runs of horizontal piping, and support together on field-fabricated trapeze pipe hangers.
 - 1. Pipes of Various Sizes: Support together and space trapezes for smallest pipe size or install intermediate supports for smaller diameter pipes as specified for individual pipe hangers.
 - 2. Field fabricate from ASTM A 36/A 36M, carbon-steel shapes selected for loads being supported. Weld steel according to AWS D1.1/D1.1M.
- C. Thermal-Hanger Shield Installation: Install in pipe hanger or shield for insulated piping.
- D. Fastener System Installation:
 - 1. Install mechanical-expansion anchors in concrete after concrete is placed and completely cured. Install fasteners according to manufacturer's written instructions.
- E. Install hangers and supports complete with necessary attachments, inserts, bolts, rods, nuts, washers, and other accessories.
- F. Equipment Support Installation: Fabricate from welded-structural-steel shapes.
- G. Install hangers and supports to allow controlled thermal and seismic movement of piping systems, to permit freedom of movement between pipe anchors, and to facilitate action of expansion joints, expansion loops, expansion bends, and similar units.
- H. Install lateral bracing with pipe hangers and supports to prevent swaying.
- I. Install building attachments within concrete slabs or attach to structural steel. Install additional attachments at concentrated loads, including valves, flanges, and strainers, NPS 2-1/2 and larger and at changes in direction of piping. Install concrete inserts before concrete is placed; fasten inserts to forms and install reinforcing bars through openings at top of inserts.
- J. Load Distribution: Install hangers and supports so that piping live and dead loads and stresses from movement will not be transmitted to connected equipment.
- K. Pipe Slopes: Install hangers and supports to provide indicated pipe slopes and to not exceed maximum pipe deflections allowed by ASME B31.9 for building services piping.
- L. Insulated Piping:
 - 1. Attach clamps and spacers to piping.
 - a. Piping Operating above Ambient Air Temperature: Clamp may project through insulation.

- b. Piping Operating below Ambient Air Temperature: Use thermal-hanger shield insert with clamp sized to match OD of insert.
 - c. Do not exceed pipe stress limits allowed by ASME B31.9 for building services piping.
- 2. Install MSS SP-58, Type 39, protection saddles if insulation without vapor barrier is indicated. Fill interior voids with insulation that matches adjoining insulation.
 - a. Option: Thermal-hanger shield inserts may be used. Include steel weight-distribution plate for pipe NPS 4 and larger if pipe is installed on rollers.
- 3. Install MSS SP-58, Type 40, protective shields on cold piping with vapor barrier. Shields shall span an arc of 180 degrees.
 - a. Option: Thermal-hanger shield inserts may be used. Include steel weight-distribution plate for pipe NPS 4 and larger if pipe is installed on rollers.
- 4. Shield Dimensions for Pipe: Not less than the following:
 - a. NPS 1/4 to NPS 3-1/2: 12 inches long and 0.048 inch thick.
 - b. NPS 4: 12 inches long and 0.06 inch thick.
 - c. NPS 5 and NPS 6: 18 inches long and 0.06 inch thick.
 - d. NPS 8 to NPS 14: 24 inches long and 0.075 inch thick.
 - e. NPS 16 to NPS 24: 24 inches long and 0.105 inch thick.
- 5. Pipes NPS 8 and Larger: Include wood or reinforced calcium-silicate-insulation inserts of length at least as long as protective shield.
- 6. Thermal-Hanger Shields: Install with insulation same thickness as piping insulation.

3.2 EQUIPMENT SUPPORTS

- A. Fabricate structural-steel stands to suspend equipment from structure overhead or to support equipment above floor.
- B. Grouting: Place grout under supports for equipment and make bearing surface smooth.
- C. Provide lateral bracing, to prevent swaying, for equipment supports.

3.3 METAL FABRICATIONS

- A. Cut, drill, and fit miscellaneous metal fabrications for trapeze pipe hangers and equipment supports.
- B. Fit exposed connections together to form hairline joints. Field weld connections that cannot be shop welded because of shipping size limitations.

- C. Field Welding: Comply with AWS D1.1/D1.1M procedures for shielded, metal arc welding; appearance and quality of welds; and methods used in correcting welding work; and with the following:
1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 2. Obtain fusion without undercut or overlap.
 3. Remove welding flux immediately.
 4. Finish welds at exposed connections so no roughness shows after finishing and so contours of welded surfaces match adjacent contours.

3.4 ADJUSTING

- A. Hanger Adjustments: Adjust hangers to distribute loads equally on attachments and to achieve indicated slope of pipe.
- B. Trim excess length of continuous-thread hanger and support rods to 1-1/2 inches.

3.5 PAINTING

- A. Touchup: Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting. Comply with SSPC-PA 1 requirements for touching up field-painted surfaces.
1. Apply paint by brush or spray to provide a minimum dry film thickness of 2.0 mils.
- B. Touchup: Cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint on miscellaneous metal are specified in Section 099113 "Exterior Painting" Section 099123 "Interior Painting" and Section 099600 "High-Performance Coatings."
- C. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A 780.

3.6 HANGER AND SUPPORT SCHEDULE

- A. Specific hanger and support requirements are in Sections specifying piping systems and equipment.
- B. Comply with MSS SP-69 for pipe-hanger selections and applications that are not specified in piping system Sections.
- C. Use hangers and supports with galvanized metallic coatings for piping and equipment that will not have field-applied finish.
- D. Use nonmetallic coatings on attachments for electrolytic protection where attachments are in direct contact with copper tubing.

- E. Use carbon-steel pipe hangers and supports and attachments for general service applications.
- F. Use copper-plated pipe hangers and copper or stainless-steel attachments for copper piping and tubing.
- G. Use padded hangers for piping that is subject to scratching.
- H. Use thermal-hanger shield inserts for insulated piping and tubing.
- I. Horizontal-Piping Hangers and Supports: Unless otherwise indicated and except as specified in piping system Sections, install the following types:
 - 1. Adjustable, Steel Clevis Hangers (MSS Type 1): For suspension of noninsulated or insulated, stationary pipes NPS 1/2 to NPS 30.
 - 2. Adjustable, Swivel-Ring Band Hangers (MSS Type 10): For suspension of noninsulated, stationary pipes NPS 1/2 to NPS 8.
 - 3. Extension Hinged or Two-Bolt Split Pipe Clamps (MSS Type 12): For suspension of noninsulated, stationary pipes NPS 3/8 to NPS 3.
- J. Vertical-Piping Clamps: Unless otherwise indicated and except as specified in piping system Sections, install the following types:
 - 1. Extension Pipe or Riser Clamps (MSS Type 8): For support of pipe risers NPS 3/4 to NPS 24.
- K. Hanger-Rod Attachments: Unless otherwise indicated and except as specified in piping system Sections, install the following types:
 - 1. Steel Turnbuckles (MSS Type 13): For adjustment up to 6 inches for heavy loads.
 - 2. Steel Clevises (MSS Type 14): For 120 to 450 deg F piping installations.
 - 3. Swivel Turnbuckles (MSS Type 15): For use with MSS Type 11, split pipe rings.
 - 4. Malleable-Iron Sockets (MSS Type 16): For attaching hanger rods to various types of building attachments.
 - 5. Steel Weldless Eye Nuts (MSS Type 17): For 120 to 450 deg F piping installations.
- L. Building Attachments: Unless otherwise indicated and except as specified in piping system Sections, install the following types:
 - 1. Steel or Malleable Concrete Inserts (MSS Type 18): For upper attachment to suspend pipe hangers from concrete ceiling.
 - 2. Top-Beam C-Clamps (MSS Type 19): For use under roof installations with bar-joist construction, to attach to top flange of structural shape.
 - 3. Center-Beam Clamps (MSS Type 21): For attaching to center of bottom flange of beams.
 - 4. Steel-Beam Clamps with Eye Nuts (MSS Type 28): For attaching to bottom of steel I-beams for heavy loads.
- M. Saddles and Shields: Unless otherwise indicated and except as specified in piping system Sections, install the following types:

1. Protection Shields (MSS Type 40): Of length recommended in writing by manufacturer to prevent crushing insulation.
 2. Thermal-Hanger Shield Inserts: For supporting insulated pipe.
- N. Comply with MSS SP-69 for trapeze pipe-hanger selections and applications that are not specified in piping system Sections.
- O. Use mechanical-expansion anchors instead of building attachments where required in concrete construction.

END OF SECTION 220529

SECTION 221413 - FACILITY STORM DRAINAGE PIPING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Pipe, tube, and fittings.
 - 2. Specialty pipe fittings.
- B. Related Sections:
 - 1. Section 220529 "Hangers And Supports For Plumbing Piping And Equipment".
 - 2. Section 221423 "Storm Drainage Piping Specialties".

1.3 PERFORMANCE REQUIREMENTS

- A. Components and installation shall be capable of withstanding the following minimum working pressure unless otherwise indicated:
 - 1. Storm Drainage Piping: 10-foot head of water.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
 - 1. Insulation: Provide non-combustible FM Approved product, suitable for use in return air plenum. Contractor to provide data to FM Global for review; copy Architect.
- B. Shop Drawings: For controlled-flow roof drainage system. Include calculations, plans, and details.

1.5 INFORMATIONAL SUBMITTALS

- A. Field quality-control reports.

1.6 QUALITY ASSURANCE

- A. Piping materials shall bear label, stamp, or other markings of specified testing agency.

PART 2 - PRODUCTS

2.1 PIPING MATERIALS

- A. Comply with requirements in "Piping Schedule" Article for applications of pipe, tube, fitting materials, and joining methods for specific services, service locations, and pipe sizes.

2.2 PVC PIPE AND FITTINGS

- A. Solid-Wall PVC Pipe: ASTM D 2665, drain, waste, and vent.
- B. PVC Socket Fittings: ASTM D 2665, made to ASTM D 3311, drain, waste, and vent patterns and to fit Schedule 40 pipe.
- C. Adhesive Primer: ASTM F 656.
- D. Solvent Cement: ASTM D 2564.

2.3 SPECIALTY PIPE FITTINGS

- A. Transition Couplings:
 - 1. General Requirements: Fitting or device for joining piping with small differences in OD's or of different materials. Include end connections same size as and compatible with pipes to be joined.
 - 2. Fitting-Type Transition Couplings: Manufactured piping coupling or specified-piping-system fitting.
 - 3. Pressure Transition Couplings:
 - 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) Cascade Waterworks Mfg. Co.
 - 2) Dresser, Inc.
 - 3) EBAA Iron, Inc.
 - 4) Ford Meter Box Company, Inc. (The)
 - 5) JCM Industries, Inc.
 - 6) Romac Industries, Inc.
 - 7) Smith-Blair, Inc.; a Sensus company.
 - 8) Viking Johnson; c/o Mueller Co.

- b. Standard: AWWA C219.
- c. Description: Metal, sleeve-type couplings same size as, with pressure rating at least equal to and ends compatible with, pipes to be joined.
- d. Center-Sleeve Material: Manufacturer's standard.
- e. Gasket Material: Natural or synthetic rubber.
- f. Metal Component Finish: Corrosion-resistant coating or material.

PART 3 - EXECUTION

3.1 PIPING INSTALLATION

- A. Drawing plans, schematics, and diagrams indicate general location and arrangement of piping systems. Indicated locations and arrangements were used to size pipe and calculate friction loss, expansion, pump sizing, and other design considerations. Install piping as indicated unless deviations from layout are approved on coordination drawings.
- B. Install piping in concealed locations unless otherwise indicated and except in equipment rooms and service areas.
- C. Install piping indicated to be exposed and piping in equipment rooms and service areas at right angles or parallel to building walls. Diagonal runs are prohibited unless specifically indicated otherwise.
- D. Install piping above accessible ceilings to allow sufficient space for ceiling panel removal.
- E. Install piping to permit valve servicing.
- F. Install piping at indicated slopes.
- G. Install piping free of sags and bends.
- H. Install fittings for changes in direction and branch connections.
- I. Install piping to allow application of insulation.
- J. Make changes in direction for storm drainage piping using appropriate branches, bends, and long-sweep bends. Do not change direction of flow more than 90 degrees. Use proper size of standard increasers and reducers if pipes of different sizes are connected. Reducing size of drainage piping in direction of flow is prohibited.
- K. Lay buried building storm drainage piping beginning at low point of each system. Install true to grades and alignment indicated, with unbroken continuity of invert. Place hub ends of piping upstream. Install required gaskets according to manufacturer's written instructions for use of lubricants, cements, and other installation requirements. Maintain swab in piping and pull past each joint as completed.
- L. Install storm drainage piping at the following minimum slopes unless otherwise indicated:

1. Building Storm Drain: 2 percent downward in direction of flow for piping NPS 3 and smaller; 1 percent downward in direction of flow for piping NPS 4 and larger.
2. Horizontal Storm-Drainage Piping: 2 percent downward in direction of flow.

M. Plumbing Specialties:

1. Install cleanouts at grade and extend to where building storm drains connect to building storm sewers in storm drainage gravity-flow piping. Install cleanout fitting with closure plug inside the building in storm drainage force-main piping. Comply with requirements for cleanouts specified in Section 221423 "Storm Drainage Piping Specialties."
2. Install drains in storm drainage gravity-flow piping. Comply with requirements for drains specified in Section 221423 "Storm Drainage Piping Specialties."

N. Do not enclose, cover, or put piping into operation until it is inspected and approved by authorities having jurisdiction.

O. Install sleeves for piping penetrations of walls, ceilings, and floors.

P. Install sleeve seals for piping penetrations of concrete walls and slabs.

Q. Install escutcheons for piping penetrations of walls, ceilings, and floors.

3.2 JOINT CONSTRUCTION

A. Plastic, Nonpressure-Piping, Solvent-Cemented Joints: Clean and dry joining surfaces. Join pipe and fittings according to the following:

1. Comply with ASTM F 402 for safe-handling practice of cleaners, primers, and solvent cements.
2. PVC Piping: Join according to ASTM D 2855 and ASTM D 2665 Appendixes.

3.3 SPECIALTY PIPE FITTING INSTALLATION

A. Transition Couplings:

1. Install transition couplings at joints of piping with small differences in OD's.
2. In Aboveground Force-Main Piping: Fitting-type transition couplings.
3. In Underground Force-Main Piping:
 - a. NPS 1-1/2 and Smaller: Fitting-type transition couplings.
 - b. NPS 2 and Larger: Pressure transition couplings.

3.4 HANGER AND SUPPORT INSTALLATION

A. Comply with requirements for seismic-restraint devices specified in Section 220548 "Vibration and Seismic Controls for Plumbing Piping and Equipment."

- B. Comply with requirements for pipe hanger and support devices and installation specified in Section 220529 "Hangers and Supports for Plumbing Piping and Equipment."
 - 1. Install carbon-steel pipe hangers for horizontal piping in noncorrosive environments.
 - 2. Install stainless-steel pipe support clamps for vertical piping in corrosive environments.
 - 3. Vertical Piping: MSS Type 8 or Type 42, clamps.
 - 4. Individual, Straight, Horizontal Piping Runs:
 - a. 100 Feet and Less: MSS Type 1, adjustable, steel clevis hangers.
 - b. Longer Than 100 Feet: MSS Type 1, adjustable, steel clevis hangers.
- C. Support horizontal piping and tubing within 12 inches of each fitting and coupling.
- D. Support vertical piping and tubing at base and at each floor.
- E. Install hangers for PVC piping with the following maximum horizontal spacing and minimum rod diameters:
 - 1. NPS 4 and NPS 5: 48 inches with 5/8-inch rod.
 - 2. NPS 6 and NPS 8: 48 inches with 3/4-inch rod.
- F. Install supports for vertical PVC piping every 48 inches.
- G. Support piping and tubing not listed above according to MSS SP-69 and manufacturer's written instructions.

3.5 CONNECTIONS

- A. Connect interior storm drainage piping to exterior storm drainage piping. Use transition fitting to join dissimilar piping materials.
- B. Connect storm drainage piping to roof drains and storm drainage specialties.
 - 1. Install test tees (wall cleanouts) in conductors near floor, and floor cleanouts with cover flush with floor.
 - 2. Comply with requirements for cleanouts and drains specified in Section 221423 "Storm Drainage Piping Specialties."
- C. Where installing piping adjacent to equipment, allow space for service and maintenance of equipment.

3.6 FIELD QUALITY CONTROL

- A. During installation, notify authorities having jurisdiction at least 24 hours before inspection must be made. Perform tests specified below in presence of authorities having jurisdiction.

1. Roughing-in Inspection: Arrange for inspection of piping before concealing or closing-in after roughing-in.
 2. Final Inspection: Arrange for final inspection by authorities having jurisdiction to observe tests specified below and to ensure compliance with requirements.
- B. Reinspection: If authorities having jurisdiction find that piping will not pass test or inspection, make required corrections and arrange for reinspection.
- C. Reports: Prepare inspection reports and have them signed by authorities having jurisdiction.
- D. Test storm drainage piping according to procedures of authorities having jurisdiction or, in absence of published procedures, as follows:
1. Test for leaks and defects in new piping and parts of existing piping that have been altered, extended, or repaired. If testing is performed in segments, submit separate report for each test, complete with diagram of portion of piping tested.
 2. Leave uncovered and unconcealed new, altered, extended, or replaced storm drainage piping until it has been tested and approved. Expose work that was covered or concealed before it was tested.
3. Test Procedure: Test storm drainage piping on completion of roughing-in. Close openings in piping system and fill with water to point of overflow, but not less than 10-foot head of water. From 15 minutes before inspection starts until completion of inspection, water level must not drop. Inspect joints for leaks.
4. Repair leaks and defects with new materials and retest piping, or portion thereof, until satisfactory results are obtained.
5. Prepare reports for tests and required corrective action.

3.7 CLEANING

- A. Clean interior of piping. Remove dirt and debris as work progresses.
- B. Protect drains during remainder of construction period to avoid clogging with dirt and debris and to prevent damage from traffic and construction work.
- C. Place plugs in ends of uncompleted piping at end of day and when work stops.

3.8 PIPING SCHEDULE

- A. Flanges and unions may be used on aboveground pressure piping unless otherwise indicated.
- A. Aboveground storm drainage piping NPS 6 and smaller shall be the following:
 1. Solid-wall PVC pipe, PVC socket fittings, and solvent-cemented joints.
- B. Aboveground, storm drainage piping NPS 8 and larger shall be the following:

1. Solid-wall PVC pipe, PVC socket fittings, and solvent-cemented joints.

END OF SECTION 221413

SECTION 221423 - STORM DRAINAGE PIPING SPECIALTIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Roof drains.
 - 2. Cleanouts.
 - 3. Miscellaneous storm drainage piping specialties.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.

1.4 QUALITY ASSURANCE

- A. Drainage piping specialties shall bear label, stamp, or other markings of specified testing agency.

PART 2 - PRODUCTS

2.1 METAL ROOF DRAINS

- A. Cast-Iron, Large, Bi-Functional Roof Drains:
 - 1. Basis-of-Design Product: Subject to compliance with requirements, provide **Froet Drain, Bi-Functional Roof Drain 100C4-OFS (4" Piping), Bi-Functional Roof Drain 100C3-OFS (3" Piping)** manufactured by Froet Industries LLC, www.froetindustries.com, or comparable product by one of the following:
 - a. Josam Company.
 - b. Watts Water Technologies, Inc.
 - c. Zurn Plumbing Products Group.
 - 2. Standard: ASME A112.21.2M, for roof drains.
 - 3. Body Material: Cast iron.

4. Dimension of Body: 13-inch diameter; minimum 112 sq. in. dome free area.
5. Combination Flashing Ring and Gravel Stop: Required.
6. Flow-Control Weirs: Not required.
7. Dual Outlet: Bottom and 45 Degree.
8. Extension Collars: Required.
9. Underdeck Clamp: Required.
10. Expansion Joint: Not required.
11. Dome Material: Plastic.

2.2 CLEANOUTS

A. Wall Cleanouts:

1. 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:
 - a. Josam Company.
 - b. MIFAB, Inc.
 - c. Smith, Jay R. Mfg. Co.
 - d. Tyler Pipe.
 - e. Watts Water Technologies, Inc.
 - f. Zurn Plumbing Products Group; Specification Drainage Operation.
2. Standard: ASME A112.36.2M, for cleanouts. Include wall access.
3. Size: Same as connected drainage piping.
4. Body Material: Hubless, cast-iron soil-pipe test tee as required to match connected piping.
5. Closure: Countersunk or raised-head, drilled-and-threaded brass plug.
6. Closure Plug Size: Same as or not more than one size smaller than cleanout size.
7. Wall Access: Round, flat, chrome-plated brass or stainless-steel cover plate with screw.

2.3 MISCELLANEOUS STORM DRAINAGE PIPING SPECIALTIES

A. Conductor Nozzles:

1. 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:
 - a. Smith, Jay R. Mfg. Co.
 - b. Zurn Plumbing Products Group
2. Description: Bronze body with threaded inlet and bronze wall flange with mounting holes. Provide integral bird and insect screen.
3. Size: Same as connected conductor.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install roof drains at low points of roof areas according to roof membrane manufacturer's written installation instructions.
 - 1. Install flashing collar or flange of roof drain to prevent leakage between drain and adjoining roofing. Maintain integrity of waterproof membranes where penetrated.
 - 2. Install expansion joints, if indicated, in roof drain outlets.
 - 3. Position roof drains for easy access and maintenance.
- B. Install cleanouts in aboveground piping and building drain piping according to the following instructions unless otherwise indicated:
 - 1. Use cleanouts the same size as drainage piping up to NPS 4. Use NPS 4 for larger drainage piping unless larger cleanout is indicated.
 - 2. Locate cleanouts at each change in direction of piping greater than 45 degrees.
 - 3. Locate cleanouts at minimum intervals of 50 feet for piping NPS 4 and smaller and 100 feet for larger piping.
 - 4. Locate cleanouts at base of each vertical soil and waste stack.
- C. For floor cleanouts for piping below floors, install cleanout deck plates with top flush with finished floor.
- D. For cleanouts located in concealed piping, install cleanout wall access covers, of types indicated, with frame and cover flush with finished wall.
- E. Install test tees in vertical conductors and near floor.
- F. Install wall cleanouts in vertical conductors. Install access door in wall as required.

3.2 CONNECTIONS

- A. Comply with requirements for piping specified in Section 221413 "Facility Storm Drainage Piping." Drawings indicate general arrangement of piping, fittings, and specialties.

3.3 PROTECTION

- A. Protect drains during remainder of construction period to avoid clogging with dirt or debris and to prevent damage from traffic or construction work.
- B. Place plugs in ends of uncompleted piping at end of each day or when work stops.

END OF SECTION 221423

Section 50 10 00 Existing Conditions Information

PROJECT-SPECIFIC AVAILABLE INFORMATION	Page Count
Garland Roofing Exist. Conditions Report	29
OMG Roofing Pull Test Report	4
Garland Roofing Uplift Reports	15
RZ Design Structural Report	4



SCSU - Lyman Hall

Prepared By
Gordon Rossi

Prepared For
Robert Roach

April 03, 2019

Table of Contents

scsu / Client Data	3
Lyman Hall / ALL / Construction Details	4
Lyman Hall / Facility Drawing	5
Lyman Hall / Section A / Construction Details	6
Lyman Hall / Section A / Inspection: Apr 1, 2019	7
Lyman Hall / Section B / Construction Details	10
Lyman Hall / Section B / Inspection: Apr 1, 2019	11
Lyman Hall / Section C / Construction Details	14
Lyman Hall / Section C / Inspection: Apr 1, 2019	15
Lyman Hall / Section D / Construction Details	17
Lyman Hall / Section D / Inspection: Apr 1, 2019	18
Lyman Hall / Section E / Construction Details	22
Lyman Hall / Section E / Inspection: Apr 1, 2019	23
Lyman Hall / Section F / Construction Details	25
Lyman Hall / Section F / Inspection: Apr 1, 2019	26
Lyman Hall / ALL / Solution: Apr 3, 2019	29



Client Data

Client: SCSU

Client Data			
Name	scsu		
Address 1	501 Crescent Street		
City	New Haven	State	Connecticut
ZIP	06515	Country	United States



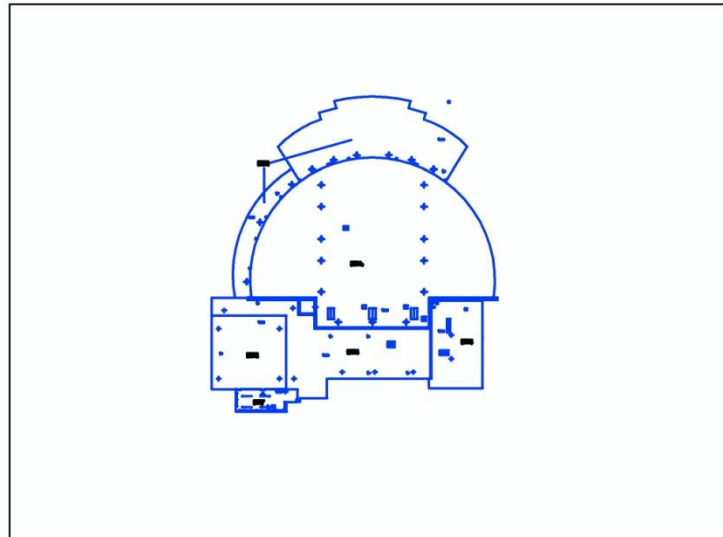
Construction Details

Client: scsu

Facility: Lyman Hall

Roof Section: ALL

Information			
Year Installed	-	Square Footage	34,363
Slope Dimension	-	Eave Height	-
Roof Access	-	System Type	-



Facility Drawing

Page 5 of 29



Construction Details

Client: scsu

Facility: Lyman Hall

Roof Section: Section A

Information			
Year Installed	1994	Square Footage	16,900
Slope Dimension	1/4"	Eave Height	35 ft
Roof Access	Internal Roof Hatch	System Type	EPDM

Assembly					
Roof #	Layer Type	Description	Attachment	R-Value	Thickness
1	Deck	Tectum	Unknown	-	-
1	Insulation	Polyisocyanurate	Mechanically attached	-	1.5"
1	Membrane	EPDM	Adhesive	-	-

Details	
Perimeter Detail	Gravel Stop, Wall Flashing
Flashing Material	EPDM
Drain System	Internal Roof Drains
Parapet Wall	Brick
Coping Cap	Stone

Notes
Height of roof and year of installation is estimated



Inspection Report

Client: SCSU

Facility: Lyman Hall

Report Date: 04/01/2019

Roof Section: Section A

Inspection Information			
Inspection Date	04/01/2019	Core Data	Yes
Inspection Type	Visual Inspection	Leakage	No
Deck Conditions	Fair		

Flashing Conditions			
Perimeter	Fair	Wall	N/A
Projections	Fair	Counterflashing	Poor

Miscellaneous Details			
Reglets	N/A	Debris	No
Control Expansion Joints	N/A	Ponding Water	Minor
Parapet Wall	Fair	Coping Joints	Poor

Perimeter	
Rating	Good
Condition	The metal edge system is in decent shape. Splits at the edge joints are present.

Field	
Rating	Poor
Condition	Additional slope may be added if the additional load can be handled by the decking system. When the core was taken, the tectum deck was dry and brittle. This condition could be due to the lack of vapor barrier, or excessive heat from the lack of insulation and the black membrane (just a theory). The membrane has been repaired in certain areas and the roof membrane was recovered at some point with a new roof membrane (original was reinforced, the new membrane is not).

Penetrations	
Rating	Invalid Lookup Rating ()
Condition	Very small amount of rooftop units for the size of the roof, seem to be in good condition. Check to see if the Fire hatches work

Drainage	
Rating	Good
Condition	Good design with the crickets in between the drains in the circular area. There is a lack of drainage along the wall where the other drains are located

Other	
Rating	Fair
Condition	There are areas of the wall where cracks in the masonry can be found

Overall	
Rating	Poor
Condition	Due to the large "repairs" of large areas would indicate that there have been issues in the recent past. It would be recommended to replace the roof with a new vapor barrier, insulation to meet Code and a new two-ply modified membrane system



Photo 1

Overall view of the roof area. Parts of this roof was recovered with a new membrane



Photo 2

Another view of the roof area



Photo 3

The other side of the roof area where another section was "repaired"



Construction Details

Client: scsu

Facility: Lyman Hall

Roof Section: Section B

Information			
Year Installed	1994	Square Footage	6,300
Slope Dimension	1/8"	Eave Height	12 ft-varies
Roof Access	Ladder Needed	System Type	EPDM

Assembly					
Roof #	Layer Type	Description	Attachment	R-Value	Thickness
1	Deck	Concrete	Unknown	-	-
1	Insulation	Polyisocyanurate	Mechanically attached	-	2"
1	Membrane	EPDM	Adhesive	-	-

Details	
Perimeter Detail	Gravel Stop, Wall Flashing
Flashing Material	EPDM
Drain System	Internal Roof Drains

Notes
Height of roof and year of installation is estimated



Inspection Report

Client: SCSU

Facility: Lyman Hall

Report Date: 04/01/2019

Roof Section: Section B

Inspection Information			
Inspection Date	04/01/2019	Core Data	Yes
Inspection Type	Visual Inspection	Leakage	No
Deck Conditions	Good		

Flashing Conditions			
Perimeter	Fair	Wall	Good
Projections	Fair	Counterflashing	Fair

Miscellaneous Details			
Reglets	N/A	Debris	No
Control Expansion Joints	N/A	Ponding Water	Minor
Parapet Wall	N/A	Coping Joints	N/A

Perimeter	
Rating	Fair
Condition	Splits are found at the edge joints. The metal edge is in good condition

Field	
Rating	Poor
Condition	Patches are lifting, field seams are dried out, and the reinforcing mat is beginning to show in certain areas of the roof membrane

Penetrations	
Rating	Good
Condition	Not many projections besides a couple of plumbing vents and the drains

Drainage	
Rating	Fair
Condition	The slope runs from the front to the back, there is evidence of ponding between the drains

Overall	
Rating	Poor
Condition	Due to the age of the roof and the the fact that the scrim is showing in certain areas would lean towards replacing the roof. The core did show a layer of coal tatr pitch on the concrete deck, which will be impossible to remove without scarifying the deck, very costly and messy.



Photo 1

View of the roof area. There is a slope in the roof and looks to be in the deck. Please confirm off of drawing



Photo 2

Front of the roof area confirming membrane system



Photo 3

The perimeter condition shows tenting (membrane not attached/adhered)



Photo 4

Small areas of ponding water is evident



Photo 5

Patches are lifting



Construction Details

Client: scsu

Facility: Lyman Hall

Roof Section: Section C

Information

Year Installed	1994	Square Footage	2,500
Slope Dimension	1/8"	Eave Height	22 ft
Roof Access	Ladder Needed	System Type	EPDM: Ballasted

Assembly

Roof #	Layer Type	Description	Attachment	R-Value	Thickness
1	Deck	Metal	Unknown	-	-
1	Insulation	Polyisocyanurate	Loose laid w/ballast	-	1.5"
1	Membrane	EPDM	Adhesive	-	-

Details

Perimeter Detail	Gravel Stop, Wall Flashing
Flashing Material	EPDM
Drain System	Internal Roof Drains

Notes

Height of roof and year of installation is estimated



Inspection Report

Client: scsu

Facility: Lyman Hall

Report Date: 04/01/2019

Roof Section: Section C

Inspection Information			
Inspection Date	04/01/2019	Core Data	Yes
Inspection Type	Visual Inspection	Leakage	No
Deck Conditions	Excellent		

Flashing Conditions			
Perimeter	Fair	Wall	N/A
Projections	Poor	Counterflashing	Poor

Miscellaneous Details			
Reglets	N/A	Debris	No
Control Expansion Joints	Fair	Ponding Water	N/A
Parapet Wall	N/A	Coping Joints	N/A

Perimeter	
Rating	Fair
Condition	There are areas at the perimeter where the membrane is tenting.

Field	
Rating	Invalid Lookup Rating ()
Condition	There are areas where the ballast has been moved to look for a leak. Inspecting the actual membrane is difficult

Penetrations	
Rating	Poor
Condition	The flashing on the rooftop unit is loose

Inspection: Apr 1, 2019

Page 15 of 29

Drainage	
Rating	Fair
Condition	It is difficult to confirm if ponding is occurring on this roof due to the ballast

Overall	
Rating	Fair
Condition	This membrane is difficult to inspect due to the ballast, typically it is recommended to replace the roof when tenting occurs and leaks begin to appear



Photo 1

View of the area



Photo 2

Membrane flashing is loose



Construction Details

Client: scsu

Facility: Lyman Hall

Roof Section: Section D

Information			
Year Installed	1994	Square Footage	5,100
Slope Dimension	1/8"	Eave Height	22 ft
Roof Access	Ladder Needed	System Type	EPDM

Assembly					
Roof #	Layer Type	Description	Attachment	R-Value	Thickness
1	Deck	Tectum	Unknown	-	-
1	Insulation	Polyisocyanurate	Mechanically attached	-	1.5"
1	Membrane	EPDM	Adhesive	-	-

Details	
Perimeter Detail	Gravel Stop, Wall Flashing
Flashing Material	EPDM
Drain System	Internal Roof Drains

Notes
Height of roof and year of installation is estimated



Construction Details

Client: scsu

Facility: Lyman Hall

Roof Section: Section D

Information			
Year Installed	1994	Square Footage	5,100
Slope Dimension	1/8"	Eave Height	22 ft
Roof Access	Ladder Needed	System Type	EPDM

Assembly					
Roof #	Layer Type	Description	Attachment	R-Value	Thickness
1	Deck	Tectum	Unknown	-	-
1	Insulation	Polyisocyanurate	Mechanically attached	-	1.5"
1	Membrane	EPDM	Adhesive	-	-

Details	
Perimeter Detail	Gravel Stop, Wall Flashing
Flashing Material	EPDM
Drain System	Internal Roof Drains

Notes
Height of roof and year of installation is estimated



Inspection Report

Client: scsu

Facility: Lyman Hall

Report Date: 04/01/2019

Roof Section: Section D

Inspection Information			
Inspection Date	04/01/2019	Core Data	Yes
Inspection Type	Visual Inspection	Leakage	No
Deck Conditions	Fair		

Flashing Conditions			
Perimeter	Fair	Wall	N/A
Projections	Fair	Counterflashing	Poor

Miscellaneous Details			
Reglets	N/A	Debris	No
Control Expansion Joints	N/A	Ponding Water	Moderate
Parapet Wall	N/A	Coping Joints	N/A

Perimeter	
Rating	Fair
Condition	Typical splits at the metal edge joints

Field	
Rating	Poor
Condition	Patches are lifting, field seams are dried and could be a source of potential leaks. The membrane is a reinforced and aged and will lead to leaks as the top layer of the EPDM membrane wears.

Penetrations	
Rating	Good
Condition	Minimal rooftop units are located on the roof. It looks as though a new rooftop unit was added

Inspection: Apr 1, 2019

Page 18 of 29

Drainage	
Rating	Poor
Condition	There some slope to the roof to the drains, however there are areas where there is evidence of ponding (dirt areas).

Overall	
Rating	Fair
Condition	The roof can be recommended to replace because of the age and the current condition of the actual membrane. If there are plans to add units during a renovation project, it would be recommended to complete the replacement.



Photo 1

Overall view of the roof area



Photo 2

Dirt indicates potential ponding areas



Photo 3

A view of the cricket along the wall (ponding)

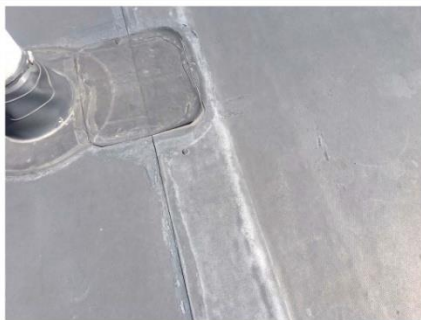


Photo 4

Patches are lifting



Photo 5

Surface mounted counterflashing



Photo 6

Open seams at the flashing



Photo 7

Seams drying out



Photo 8

Core cut shows the insulation and the tectum deck(no vapor barrier and the tectum is dry and crumbly



Construction Details

Client: scsu

Facility: Lyman Hall

Roof Section: Section E

Information			
Year Installed	1994	Square Footage	2,886
Slope Dimension	1/8"	Eave Height	26 ft
Roof Access	Ladder Needed	System Type	EPDM

Assembly					
Roof #	Layer Type	Description	Attachment	R-Value	Thickness
1	Deck	Concrete	Adhesive	-	-
1	Insulation	Polyisocyanurate	Mechanically attached	-	1.5"
1	Membrane	EPDM	Adhesive	-	-

Details	
Perimeter Detail	Gravel Stop, Wall Flashing
Flashing Material	EPDM
Drain System	Internal Roof Drains

Notes
Height of roof and year of installation is estimated



Inspection Report

Client: scsu

Facility: Lyman Hall

Report Date: 04/01/2019

Roof Section: Section E

Inspection Information			
Inspection Date	04/01/2019	Core Data	Yes
Inspection Type	Visual Inspection	Leakage	No
Deck Conditions	N/A		

Flashing Conditions			
Perimeter	Fair	Wall	N/A
Projections	N/A	Counterflashing	N/A

Miscellaneous Details			
Reglets	N/A	Debris	No
Control Expansion Joints	N/A	Ponding Water	N/A
Parapet Wall	N/A	Coping Joints	N/A

Perimeter	
Rating	Fair
Condition	Splits found at the edge joints

Field	
Rating	Fair
Condition	The membrane is reinforced. The field seams are dried. There are no other issues on this roof area

Drainage	
Rating	Good
Condition	There may be minor ponding near drains

Overall	
Rating	Fair
Condition	No photos were taken for this area. The condition is typical of the rest of the roof. There is a coating of asphalt on the concrete deck. It is unclear if the concrete is a plank system.



Construction Details

Client: scsu

Facility: Lyman Hall

Roof Section: Section F

Information			
Year Installed	unknown	Square Footage	677
Slope Dimension	1/4"	Eave Height	10 ft
Roof Access	Ladder Needed	System Type	EPDM

Assembly					
Roof #	Layer Type	Description	Attachment	R-Value	Thickness
1	Deck	Concrete	Unknown	-	-
1	Membrane	EPDM	Adhesive	-	-
1	Insulation	Polyisocyanurate	Adhesive	-	3.75"

Details	
Perimeter Detail	Gravel Stop, Wall Flashing
Flashing Material	EPDM
Drain System	Internal Roof Drains

Notes
Height of roof and year of installation is estimated



Inspection Report

Client: scsu

Facility: Lyman Hall

Report Date: 04/01/2019

Roof Section: Section F

Inspection Information			
Inspection Date	04/01/2019	Core Data	Yes
Inspection Type	Visual Inspection	Leakage	No
Deck Conditions	Good		

Flashing Conditions			
Perimeter	Good	Wall	N/A
Projections	Fair	Counterflashing	Good

Miscellaneous Details			
Reglets	N/A	Debris	No
Control Expansion Joints	N/A	Ponding Water	N/A
Parapet Wall	N/A	Coping Joints	N/A

Perimeter	
Rating	Excellent
Condition	

Field	
Rating	Invalid Lookup Rating ()
Condition	The field of the membrane is in good shape, it looks to be a newer roof area

Penetrations	
Rating	Good
Condition	A large unit in I-beams is located on the roof

Drainage	
Rating	Good
Condition	Two Drains are located on the roof for the small size of the roof.

Overall	
Rating	Good
Condition	The roof area is very cluttered for the size and due to other trades it may be considered to replace



Photo 1

View of the roof area



Photo 2

Confirming small overhang of the upper roof section



Photo 3

Very tight area



Photo 4

View of the drains




Solution Options

Client: scsu

Facility: Lyman Hall

Roof Section: ALL

Replace Options			
Solution Option:	Replace 	Action Year:	2019
Square Footage:	34,363	Expected Life (Years):	30
Budget Range:	\$962,000.00 - \$1,150,000.00		

The budget range - \$962,000 to \$1,150,000

Scope of Work:

Remove existing roof assembly to expose deck (varies)

Install vapor barrier to deck (varies). Metal deck to include 5/8' dens-deck mechanically fasten to deck , vapor barrier, then insulation system

Install new insulation system, tapered, if allowable, to meet 2019 requirements.

Install new two ply modified roof system.

The proposed system to meet FM Global Roof Nav Assembly and will be provided when requested.

Garland to complete Negative Wind Pressure Testing, prepare any documents to be submitted to local FM Global Representative

Other items included in the Budget would be to replace drains, if required

Additional considerations would be to possibly raise the counterflashing heights, rooftop units, and pre-curved metal edge system.



June 13, 2019

Gordon Rossi
Garland
14 Mabel Ave.
DANBURY, CT 6811

Re: Lyman Hall - SCSU

Dear Gordon,

I have enclosed the Job Report Number PT-04077 from the job referenced above. The report was recorded by Brenden House, OMG Technical Service Representative.

OMG is interested in your feedback on our services. Please visit www.omglistens.com to take a brief, 2-3 minute survey to help us understand how we did on this project, and more importantly, anything we can do better next time. We value your time and input, and thank you in advance for your participation. If you have any further questions, please feel free to call.

Sincerely,

A handwritten signature in black ink that reads 'Chris Mader'. The signature is written in a cursive, flowing style.

Chris Mader
Technical Services Manager

To: grossi@garlandind.com; bhouse@omginc.com

PULL TEST REPORT



JOB NAME	Lyman Hall - SCSU	REPORT NUMBER	PT-04077
JOB LOCATION	New Haven, CT	TEST DATE / TIME	6/12/2019 12:00:00 PM
ROOF AREA (SQFT)	24,000	AMBIENT TEMPERATURE	72 °F
BUILDING HEIGHT (FT)	40'	TESTER MANUFACTURER	DMD Force-2000
PROJECT TYPE	Tear-off	MAX CAP OF TESTER (LBS)	2,000
THICKNESS OF EXISTING ROOF ASSEMBLY	2"	TEST PERFORMED BY	Brenden House
ROOF COVER TYPE	BUR	TEST CUT AREA REPAIRED BY	Gordon Rossi
NEW SYSTEM MANUFACTURER	Garland	TEST WITNESSED BY	Gordon Rossi
FASTENER(S) TESTED	OlyLok		

INSULATION MANUFACTURER	INSULATION TYPE	THICKNESS
Garland	ISO	Tapered

DECK TYPE	THICKNESS
Tectum	Unknown

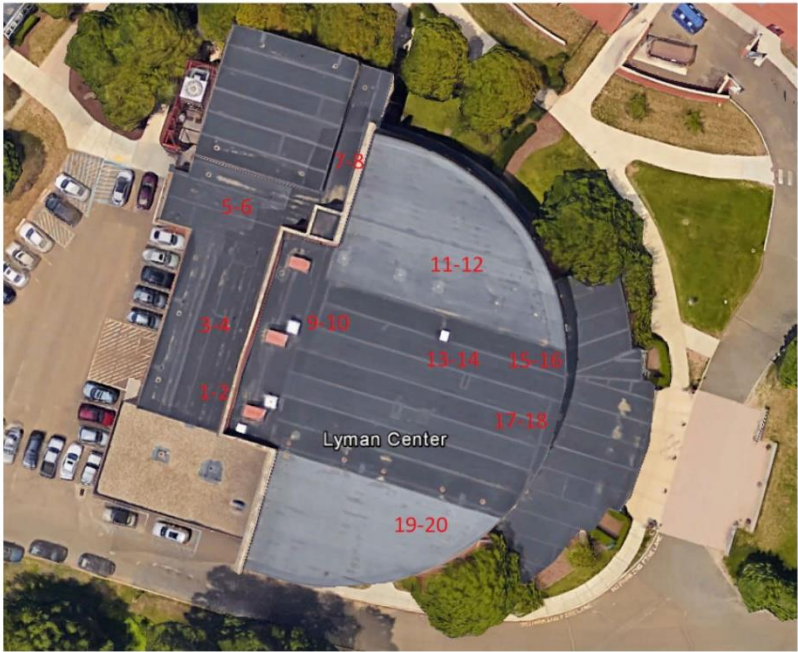
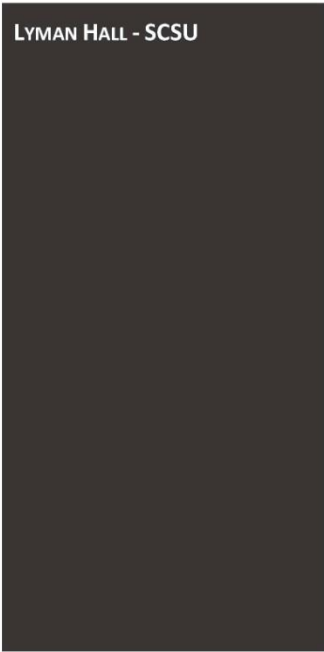
Disclaimer: Manufacturer's installation requirements shall be followed when using any of the tested fasteners or adhesives. Neither the technician performing the pullout tests, nor his/her company is responsible for the waterproofing integrity of the repairs. This test report does not certify the structural integrity of the roof deck.

TEST RESULTS



TEST LOCATION NUMBER	PULL VALUE (LBF)	FASTENER TESTED	PENETRATION (IN)	BIT DIAMETER (IN)	COMMENTS
1	99	OMG OlyLok	1.4"		
2	127	OMG OlyLok	1.8"		
3	93	OMG OlyLok	1.4"		
4	90	OMG OlyLok	1.8"		
5	108	OMG OlyLok	1.4"		
6	157	OMG OlyLok	1.8"		
7	71	OMG OlyLok	1.4"		
8	134	OMG OlyLok	1.8"		
9	85	OMG OlyLok	1.4"		
10	141	OMG OlyLok	1.8"		
11	109	OMG OlyLok	1.4"		
12	134	OMG OlyLok	1.8"		
13	86	OMG OlyLok	1.4"		
14	116	OMG OlyLok	1.8"		
15	73	OMG OlyLok	1.4"		
16	105	OMG OlyLok	1.8"		
17	82	OMG OlyLok	1.4"		
18	98	OMG OlyLok	1.8"		
19	116	OMG OlyLok	1.4"		
20	101	OMG OlyLok	1.8"		

ROOF IMAGE/DIAGRAM





The Garland Company, Inc.
Low Slope Roofing Wind Uplift Calculations
3800 East 91st Street
Cleveland, Ohio 44105-2197
Phone: (800) 321-9336 Fax (216) 883-2046

Project **Southern Connecticut State University (REV)**

Roof **Upper**

Sales Rep. **Gordon Rossi**

Location **New Haven, CT**

Zone 1 psf **28.1**
(mid roof)

Zone 2 psf **42.5**
(eaves, ridge, hip)

Zone 3 psf **60.6**
(corners)

Edge Zone Width "a" **10** ft. **3** in.

Fastener Safety Factor **3.00**

Importance **III**

Importance Factor **1**

Wind Speed (mph) **135**

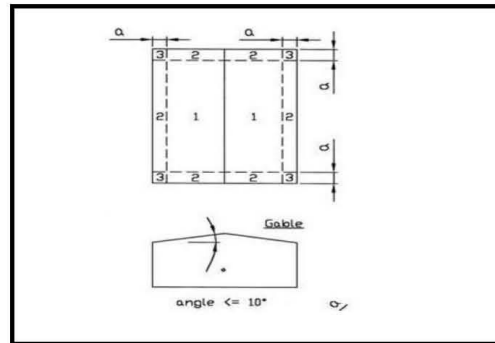
Ultimate Pullout Value (lbs/screw) **113**

Exposure Category **B**

Design Roof **40.00**

Minimum Building Width **102.00**

Roof Pitch (X, Y) **0.25** : **12**



System Type: **Modified Bitumen**

System Type: **Modified Bitumen Cold**

Surfacing: **Coated Finish**

Attachment Method: **Nail Base Sheet**

Zone 1 **9" o.c. with 4" lap and 18" o.c. in two, equally spaced rows**
(mid roof)

Zone 2 **9" o.c. with 4" lap and 9" o.c. in two, equally spaced rows**
(eaves, ridge, hip)

Zone 3 **9" o.c. with 4" lap and 9" o.c. in three, equally spaced rows**
(corners)

NOTES: Insulation adhesive was assumed to be Insul-Lock HR applied in 3/4" wide continuous ribbons spaced 12" o.c. in Zone 1, 6" o.c. in Zone 2 and 4" o.c. in Zone 3 per the attached diagram. An onsite pullout test is required. The average ultimate pullout must meet or exceed 113 lbs. per fastener; otherwise a new calculation must be performed. Reference RoofNav Assembly #: 250665-265748-0.

EDGE SECUREMENT: Edge metal system must be ANSI/SPRI ES-1 compliant, as required by section 1504.5 of International Building Code. Edge metal system may be an ANSI/SPRI ES-1 compliant premanufactured system, or formed by a contractor certified to fabricate an ANSI/SPRI ES-1 compliant system.

*Unless specifically stated otherwise, these calculations are based on

ASCE 7-10 (American Society for Civil Engineers); if a specific building code is required, please specify.

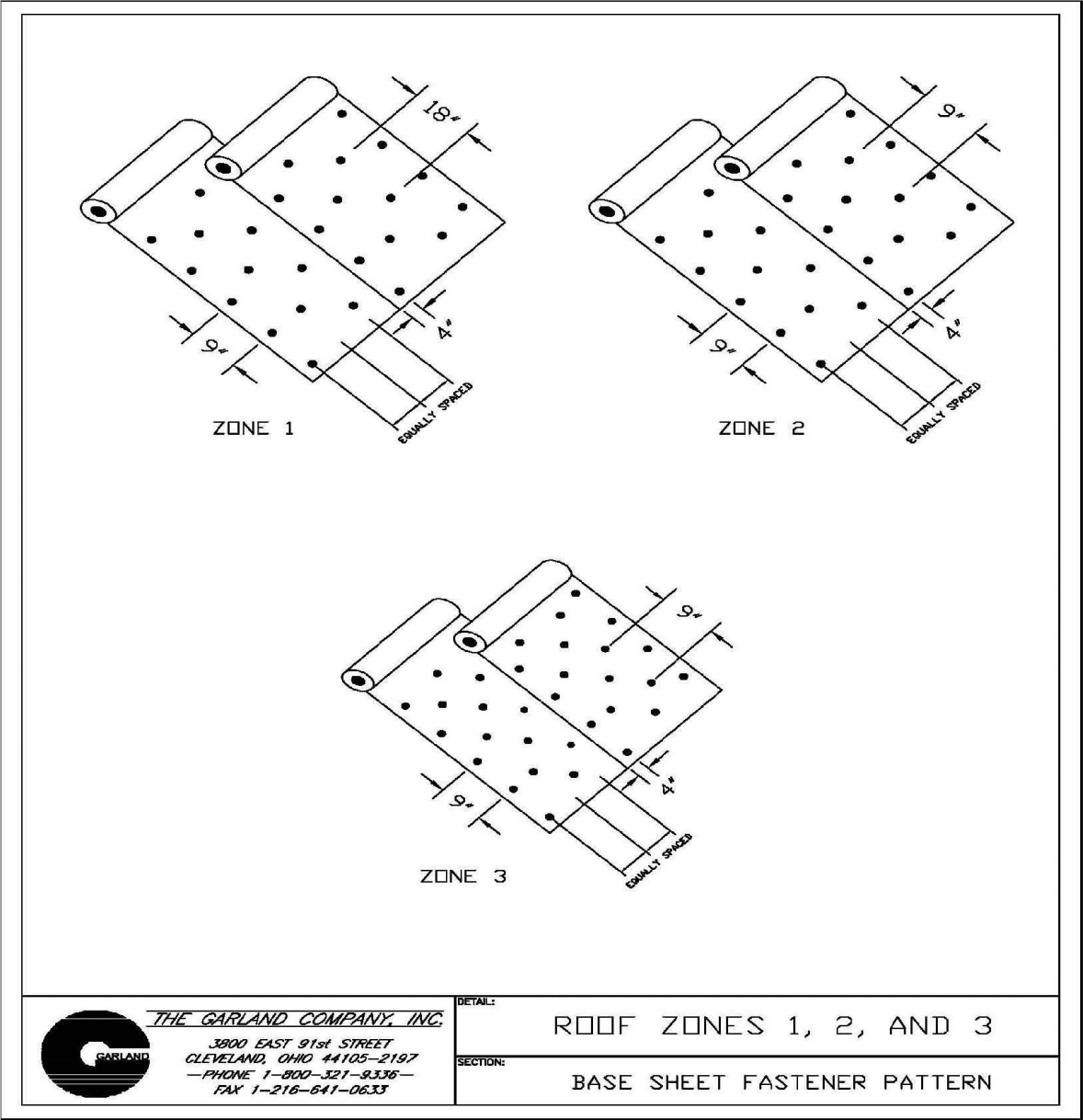
*It is recommended to include the "Negative Uplift Pressures" in the specifications as well as the Safety Factor, Importance Factor, Building Category, Wind Speed, Ultimate Pullout Value, and Exposure.

*The Wind Speed is determined based upon geographical location.

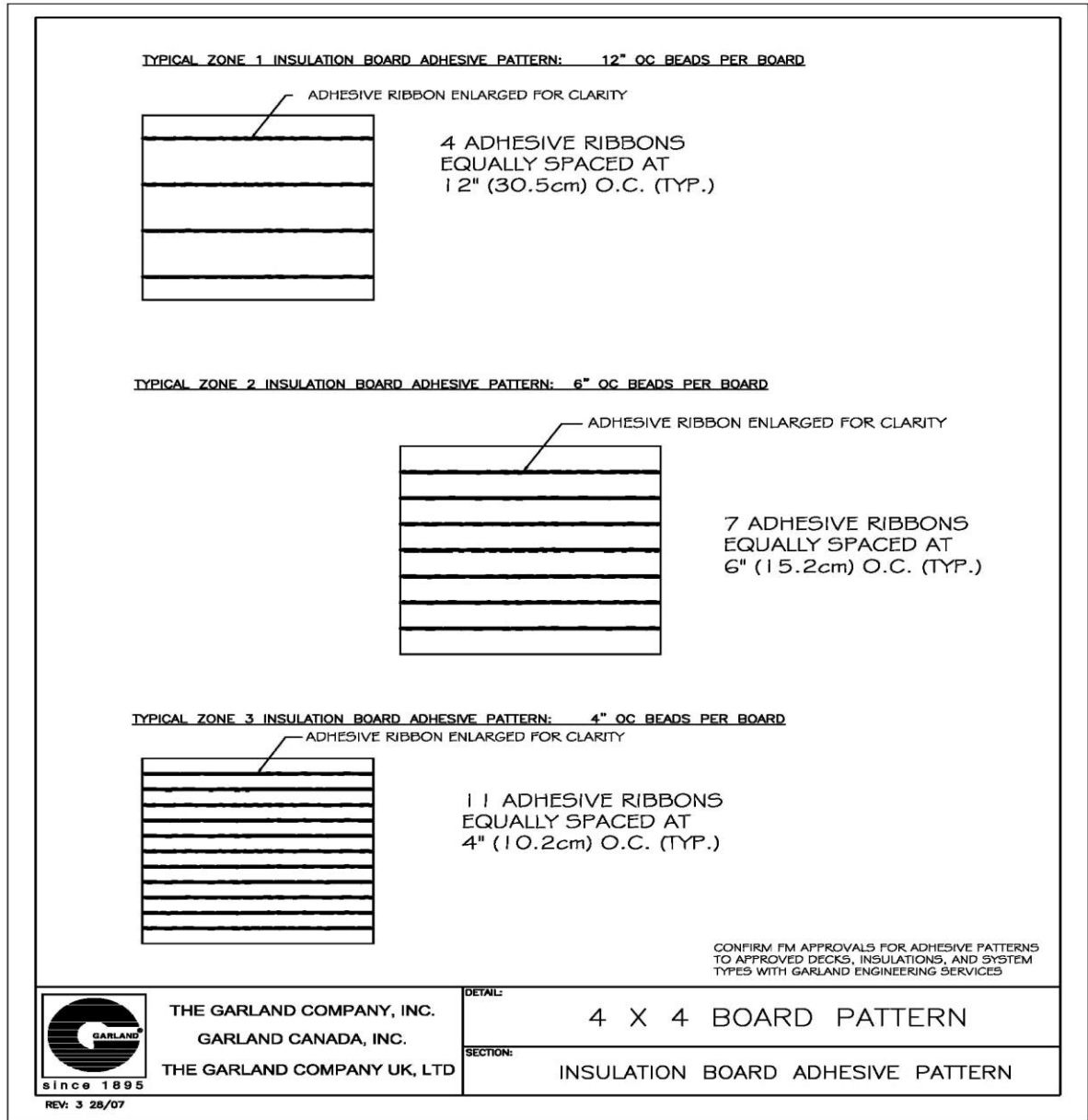
*The Exposure and Importance Factors are needed to determine the uplift pressures.

If you have any questions, please call 800-321-9336 or respond to engineering@garlandind.com


3800 East 91st Street, Cleveland, Ohio 44105-2197 Phone: (800) 321-9336



3800 East 91st Street, Cleveland, Ohio 44105-2197 Phone: (800) 321-9336



3800 East 91st Street, Cleveland, Ohio 44105-2197 Phone: (800) 321-9336

	PROJECT	Southern Connecticut State University (REV)																																																																		
	ROOF SECTION	Upper																																																																		
	DATE	6/11/2019																																																																		
	BASIC VELOCITY PRESSURE	30.16	psf																																																																	
	DESIGN CODE	ASCE 7-10																																																																		
<div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="width: 45%;"> <p>System & Attachment Data</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="text-align: right;">SYSTEM TYPE</td><td>Modified Bitumen</td></tr> <tr><td style="text-align: right;">SYSTEM SCOPE</td><td>Modified Bitumen Cold</td></tr> <tr><td style="text-align: right;">SURFACING</td><td>Coated Finish</td></tr> <tr><td style="text-align: right;">ATTACHMENT METHOD</td><td>Nail Base Sheet</td></tr> <tr><td style="text-align: right;">SUBSTRATE MATERIAL</td><td>Tectum</td></tr> <tr><td style="text-align: right;">SUBSTRATE THICKNESS</td><td>2 in</td></tr> <tr><td style="text-align: right;">FASTENER TYPE</td><td>User</td></tr> <tr><td style="text-align: right;">FASTENER SAFETY FACTOR</td><td>3</td></tr> <tr><td style="text-align: right;">ULTIMATE FASTENER PULLOUT</td><td>113 lbs/screw</td></tr> <tr><td style="text-align: right;">ALLOWABLE FASTENER PULLOUT</td><td>38 lbs/screw</td></tr> </table> </div> <div style="width: 45%;"> <p>Building & Site Data</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="text-align: right;">BASIC WIND SPEED</td><td>135</td><td>mph</td></tr> <tr><td style="text-align: right;">EXPOSURE CATEGORY</td><td colspan="2">B</td></tr> <tr><td style="text-align: right;">TOPOGRAPHY FACTOR</td><td colspan="2">1.00</td></tr> <tr><td style="text-align: right;">BUILDING TYPE</td><td colspan="2">Partially Enclosed</td></tr> <tr><td style="text-align: right;">ROOF PITCH (X, Y)</td><td>0.25</td><td>12</td></tr> <tr><td style="text-align: right;">RUN TO RIDGE</td><td colspan="2">51</td></tr> <tr><td style="text-align: right;">EAVE HEIGHT</td><td colspan="2">40</td></tr> <tr><td style="text-align: right;">DESIGN ROOF HEIGHT</td><td>40.00</td><td>ft</td></tr> <tr><td style="text-align: right;">IMPORTANCE CLASS / FACTOR</td><td>III</td><td>1</td></tr> <tr><td style="text-align: right;">MIN. BLDG WIDTH</td><td>102</td><td>ft</td></tr> <tr><td style="text-align: right;">WIND-BORNE DEBRIS REGION</td><td colspan="2">Yes</td></tr> <tr><td style="text-align: right;">PARAPET</td><td colspan="2">No</td></tr> <tr><td style="text-align: right;">ROOF ANGLE</td><td>1.19</td><td>deg</td></tr> <tr><td style="text-align: right;">PROTECTED OPENINGS</td><td colspan="2">Yes</td></tr> <tr><td style="text-align: right;">ROOF TYPE</td><td colspan="2">Gable</td></tr> </table> </div> </div>				SYSTEM TYPE	Modified Bitumen	SYSTEM SCOPE	Modified Bitumen Cold	SURFACING	Coated Finish	ATTACHMENT METHOD	Nail Base Sheet	SUBSTRATE MATERIAL	Tectum	SUBSTRATE THICKNESS	2 in	FASTENER TYPE	User	FASTENER SAFETY FACTOR	3	ULTIMATE FASTENER PULLOUT	113 lbs/screw	ALLOWABLE FASTENER PULLOUT	38 lbs/screw	BASIC WIND SPEED	135	mph	EXPOSURE CATEGORY	B		TOPOGRAPHY FACTOR	1.00		BUILDING TYPE	Partially Enclosed		ROOF PITCH (X, Y)	0.25	12	RUN TO RIDGE	51		EAVE HEIGHT	40		DESIGN ROOF HEIGHT	40.00	ft	IMPORTANCE CLASS / FACTOR	III	1	MIN. BLDG WIDTH	102	ft	WIND-BORNE DEBRIS REGION	Yes		PARAPET	No		ROOF ANGLE	1.19	deg	PROTECTED OPENINGS	Yes		ROOF TYPE	Gable	
SYSTEM TYPE	Modified Bitumen																																																																			
SYSTEM SCOPE	Modified Bitumen Cold																																																																			
SURFACING	Coated Finish																																																																			
ATTACHMENT METHOD	Nail Base Sheet																																																																			
SUBSTRATE MATERIAL	Tectum																																																																			
SUBSTRATE THICKNESS	2 in																																																																			
FASTENER TYPE	User																																																																			
FASTENER SAFETY FACTOR	3																																																																			
ULTIMATE FASTENER PULLOUT	113 lbs/screw																																																																			
ALLOWABLE FASTENER PULLOUT	38 lbs/screw																																																																			
BASIC WIND SPEED	135	mph																																																																		
EXPOSURE CATEGORY	B																																																																			
TOPOGRAPHY FACTOR	1.00																																																																			
BUILDING TYPE	Partially Enclosed																																																																			
ROOF PITCH (X, Y)	0.25	12																																																																		
RUN TO RIDGE	51																																																																			
EAVE HEIGHT	40																																																																			
DESIGN ROOF HEIGHT	40.00	ft																																																																		
IMPORTANCE CLASS / FACTOR	III	1																																																																		
MIN. BLDG WIDTH	102	ft																																																																		
WIND-BORNE DEBRIS REGION	Yes																																																																			
PARAPET	No																																																																			
ROOF ANGLE	1.19	deg																																																																		
PROTECTED OPENINGS	Yes																																																																			
ROOF TYPE	Gable																																																																			
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th></th> <th>ZONE 1</th> <th>ZONE 2</th> <th>ZONE 3</th> <th>ZONE 4</th> <th>ZONE 5</th> </tr> <tr> <td style="text-align: right;">ROOF PRESSURE (psf)</td> <td>28.1</td> <td>42.5</td> <td>60.6</td> <td>27.9</td> <td>32.8</td> </tr> <tr> <td style="text-align: right;">OVERHANG PRESSURE (psf)</td> <td>30.77</td> <td>30.77</td> <td>50.68</td> <td></td> <td></td> </tr> <tr> <td style="text-align: right;">EDGE ZONE WIDTH "a" =</td> <td>10.20</td> <td>ft</td> <td></td> <td></td> <td></td> </tr> </table>		ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ROOF PRESSURE (psf)	28.1	42.5	60.6	27.9	32.8	OVERHANG PRESSURE (psf)	30.77	30.77	50.68			EDGE ZONE WIDTH "a" =	10.20	ft																																														
	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5																																																															
ROOF PRESSURE (psf)	28.1	42.5	60.6	27.9	32.8																																																															
OVERHANG PRESSURE (psf)	30.77	30.77	50.68																																																																	
EDGE ZONE WIDTH "a" =	10.20	ft																																																																		



The Garland Company, Inc.
Low Slope Roofing Wind Uplift Calculations
3800 East 91st Street
Cleveland, Ohio 44105-2197
Phone: (800) 321-9336 Fax (216) 883-2046

Project **Southern Connecticut State University (REV)**

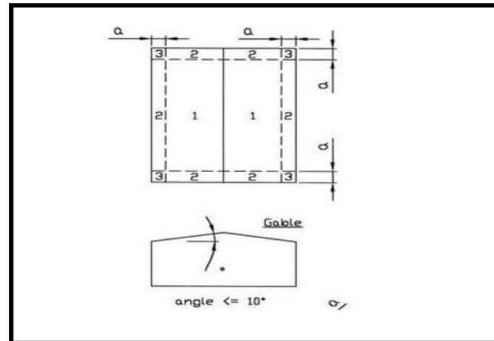
Roof **Mid Rear**

Sales Rep. **Gordon Rossi**

Location **New Haven, CT**

Zone 1 psf 25.8 (mid roof)	Zone 2 psf 39.2 (eaves, ridge, hip)	Zone 3 psf 55.8 (corners)
--------------------------------------	---	-------------------------------------

Edge Zone Width "a"	8 ft.	5 in.
Fastener Safety Factor	3.00	
Importance	III	
Importance Factor	1	
Wind Speed (mph)	135	
Ultimate Pullout Value (lbs/screw)	104	
Exposure Category	B	
Design Roof	30.00	
Minimum Building Width	84.00	
Roof Pitch (X, Y)	0.25	12



System Type: **Modified Bitumen**

System Type: **Cold**

Surfacing: **Coated Finish**

Attachment Method: **Nail Base Sheet**

Zone 1 <u>9"</u> o.c. with <u>4"</u> lap and <u>18"</u> o.c. in (mid roof) two, equally spaced rows	Zone 2 <u>9"</u> o.c. with <u>4"</u> lap and <u>9"</u> o.c. in (eaves, ridge, hip) two, equally spaced rows	Zone 3 <u>9"</u> o.c. with <u>4"</u> lap and <u>9"</u> o.c. in (corners) three, equally spaced rows
--	--	--

NOTES: Insulation adhesive was assumed to be Insul-Lock HR applied in 3/4" wide continuous ribbons spaced 12" o.c. in Zone 1, 6" o.c. in Zone 2 and 4" o.c. in Zone 3 per the attached diagram. An onsite pullout test is required. The average ultimate pullout must meet or exceed 104 lbs. per fastener; otherwise a new calculation must be performed. Reference RoofNav Assembly #: 250665-265748-0.

EDGE SECUREMENT: Edge metal system must be ANSI/SPRI ES-1 compliant, as required by section 1504.5 of International Building Code. Edge metal system may be an ANSI/SPRI ES-1 compliant premanufactured system, or formed by a contractor certified to fabricate an ANSI/SPRI ES-1 compliant system.

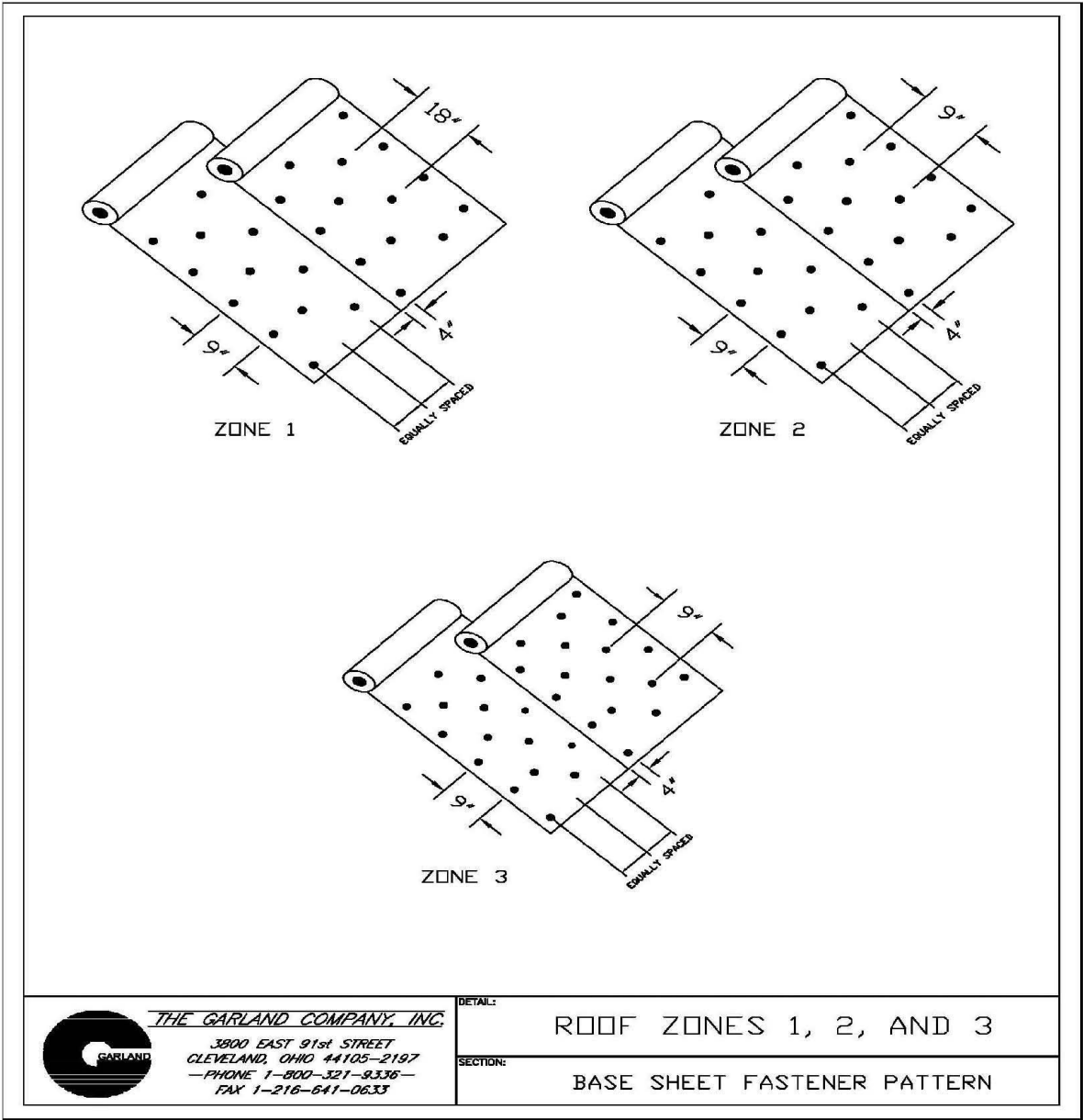
*Unless specifically stated otherwise, these calculations are based on ASCE 7-10 (American Society for Civil Engineers); if a specific building code is required, please specify.

*It is recommended to include the "Negative Uplift Pressures" in the specifications as well as the Safety Factor, Importance Factor, Building Category, Wind Speed, Ultimate Pullout Value, and Exposure.

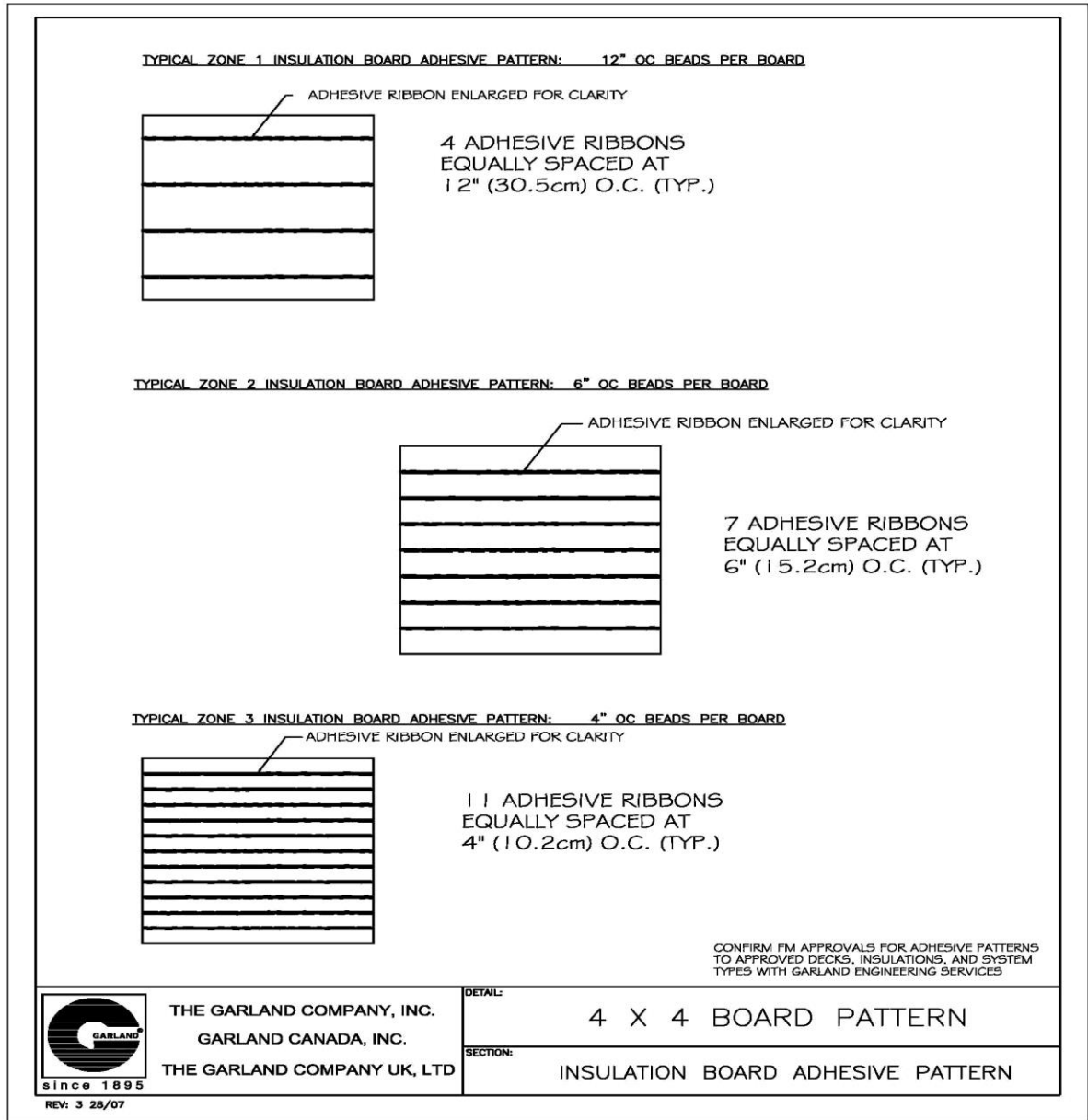
*The Wind Speed is determined based upon geographical location.

*The Exposure and Importance Factors are needed to determine the uplift pressures.


If you have any questions, please call 800-321-9336 or respond to engineering@garlandind.com




3800 East 91st Street, Cleveland, Ohio 44105-2197 Phone: (800) 321-9336



3800 East 91st Street, Cleveland, Ohio 44105-2197 Phone: (800) 321-9336

	PROJECT	Southern Connecticut State University (REV)																																																																		
	ROOF SECTION	Mid Rear																																																																		
	DATE	6/11/2019																																																																		
	BASIC VELOCITY PRESSURE	27.78	psf																																																																	
	DESIGN CODE	ASCE 7-10																																																																		
<div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="width: 45%;"> <p>System & Attachment Data</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>SYSTEM TYPE</td><td>Modified Bitumen</td></tr> <tr><td>SYSTEM SCOPE</td><td>Modified Bitumen Cold</td></tr> <tr><td>SURFACING</td><td>Coated Finish</td></tr> <tr><td>ATTACHMENT METHOD</td><td>Nail Base Sheet</td></tr> <tr><td>SUBSTRATE MATERIAL</td><td>Tectum</td></tr> <tr><td>SUBSTRATE THICKNESS</td><td>2 in</td></tr> <tr><td>FASTENER TYPE</td><td>User</td></tr> <tr><td>FASTENER SAFETY FACTOR</td><td>3</td></tr> <tr><td>ULTIMATE FASTENER PULLOUT</td><td>104 lbs/screw</td></tr> <tr><td>ALLOWABLE FASTENER PULLOUT</td><td>35 lbs/screw</td></tr> </table> </div> <div style="width: 45%;"> <p>Building & Site Data</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>BASIC WIND SPEED</td><td>135</td><td>mph</td></tr> <tr><td>EXPOSURE CATEGORY</td><td colspan="2">B</td></tr> <tr><td>TOPOGRAPHY FACTOR</td><td colspan="2">1.00</td></tr> <tr><td>BUILDING TYPE</td><td colspan="2">Partially Enclosed</td></tr> <tr><td>ROOF PITCH (X, Y)</td><td>0.25</td><td>12</td></tr> <tr><td>RUN TO RIDGE</td><td colspan="2">42</td></tr> <tr><td>EAVE HEIGHT</td><td colspan="2">30</td></tr> <tr><td>DESIGN ROOF HEIGHT</td><td>30.00</td><td>ft</td></tr> <tr><td>IMPORTANCE CLASS / FACTOR</td><td>III</td><td>1</td></tr> <tr><td>MIN. BLDG WIDTH</td><td>84</td><td>ft</td></tr> <tr><td>WIND-BORNE DEBRIS REGION</td><td colspan="2">Yes</td></tr> <tr><td>PARAPET</td><td colspan="2">No</td></tr> <tr><td>ROOF ANGLE</td><td>1.19</td><td>deg</td></tr> <tr><td>PROTECTED OPENINGS</td><td colspan="2">Yes</td></tr> <tr><td>ROOF TYPE</td><td colspan="2">Gable</td></tr> </table> </div> </div>				SYSTEM TYPE	Modified Bitumen	SYSTEM SCOPE	Modified Bitumen Cold	SURFACING	Coated Finish	ATTACHMENT METHOD	Nail Base Sheet	SUBSTRATE MATERIAL	Tectum	SUBSTRATE THICKNESS	2 in	FASTENER TYPE	User	FASTENER SAFETY FACTOR	3	ULTIMATE FASTENER PULLOUT	104 lbs/screw	ALLOWABLE FASTENER PULLOUT	35 lbs/screw	BASIC WIND SPEED	135	mph	EXPOSURE CATEGORY	B		TOPOGRAPHY FACTOR	1.00		BUILDING TYPE	Partially Enclosed		ROOF PITCH (X, Y)	0.25	12	RUN TO RIDGE	42		EAVE HEIGHT	30		DESIGN ROOF HEIGHT	30.00	ft	IMPORTANCE CLASS / FACTOR	III	1	MIN. BLDG WIDTH	84	ft	WIND-BORNE DEBRIS REGION	Yes		PARAPET	No		ROOF ANGLE	1.19	deg	PROTECTED OPENINGS	Yes		ROOF TYPE	Gable	
SYSTEM TYPE	Modified Bitumen																																																																			
SYSTEM SCOPE	Modified Bitumen Cold																																																																			
SURFACING	Coated Finish																																																																			
ATTACHMENT METHOD	Nail Base Sheet																																																																			
SUBSTRATE MATERIAL	Tectum																																																																			
SUBSTRATE THICKNESS	2 in																																																																			
FASTENER TYPE	User																																																																			
FASTENER SAFETY FACTOR	3																																																																			
ULTIMATE FASTENER PULLOUT	104 lbs/screw																																																																			
ALLOWABLE FASTENER PULLOUT	35 lbs/screw																																																																			
BASIC WIND SPEED	135	mph																																																																		
EXPOSURE CATEGORY	B																																																																			
TOPOGRAPHY FACTOR	1.00																																																																			
BUILDING TYPE	Partially Enclosed																																																																			
ROOF PITCH (X, Y)	0.25	12																																																																		
RUN TO RIDGE	42																																																																			
EAVE HEIGHT	30																																																																			
DESIGN ROOF HEIGHT	30.00	ft																																																																		
IMPORTANCE CLASS / FACTOR	III	1																																																																		
MIN. BLDG WIDTH	84	ft																																																																		
WIND-BORNE DEBRIS REGION	Yes																																																																			
PARAPET	No																																																																			
ROOF ANGLE	1.19	deg																																																																		
PROTECTED OPENINGS	Yes																																																																			
ROOF TYPE	Gable																																																																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th></th> <th>ZONE 1</th> <th>ZONE 2</th> <th>ZONE 3</th> <th>ZONE 4</th> <th>ZONE 5</th> <th></th> <th></th> </tr> <tr> <td>ROOF PRESSURE (psf)</td> <td>25.8</td> <td>39.2</td> <td>55.8</td> <td>25.7</td> <td>30.2</td> <td></td> <td></td> </tr> <tr> <td>OVERHANG PRESSURE (psf)</td> <td>28.34</td> <td>28.34</td> <td>46.68</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>EDGE ZONE WIDTH "a" =</td> <td>8.40</td> <td>ft</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>					ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5			ROOF PRESSURE (psf)	25.8	39.2	55.8	25.7	30.2			OVERHANG PRESSURE (psf)	28.34	28.34	46.68					EDGE ZONE WIDTH "a" =	8.40	ft																																						
	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5																																																															
ROOF PRESSURE (psf)	25.8	39.2	55.8	25.7	30.2																																																															
OVERHANG PRESSURE (psf)	28.34	28.34	46.68																																																																	
EDGE ZONE WIDTH "a" =	8.40	ft																																																																		



	PROJECT Southern Connecticut State University (REV)																																																			
	ROOF SECTION	Entrance																																																		
	DATE	6/11/2019																																																		
	BASIC VELOCITY PRESSURE	27.78 psf																																																		
	DESIGN CODE	ASCE 7-10																																																		
<div style="display: flex; justify-content: space-around;"> <div> System & Attachment Data <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>SYSTEM TYPE</td><td>Modified Bitumen</td></tr> <tr><td>SYSTEM SCOPE</td><td>Modified Bitumen Cold</td></tr> <tr><td>SURFACING</td><td>Coated Finish</td></tr> <tr><td>ATTACHMENT METHOD</td><td>Insulation Adhesive</td></tr> <tr><td>SUBSTRATE MATERIAL</td><td>Concrete</td></tr> <tr><td>SUBSTRATE THICKNESS</td><td>4 in</td></tr> <tr><td>FASTENER TYPE</td><td>N/A</td></tr> <tr><td>FASTENER SAFETY FACTOR</td><td>N/A</td></tr> <tr><td>ULTIMATE FASTENER PULLOUT</td><td>N/A lbs/screw</td></tr> <tr><td>ALLOWABLE FASTENER PULLOUT</td><td>N/A lbs/screw</td></tr> </table> </div> <div> Building & Site Data <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>BASIC WIND SPEED</td><td>135 mph</td></tr> <tr><td>EXPOSURE CATEGORY</td><td>B</td></tr> <tr><td>TOPOGRAPHY FACTOR</td><td>1.00</td></tr> <tr><td>BUILDING TYPE</td><td>Partially Enclosed</td></tr> <tr><td>ROOF PITCH (X, Y)</td><td>0.25 12</td></tr> <tr><td>RUN TO RIDGE</td><td>19</td></tr> <tr><td>EAVE HEIGHT</td><td>12</td></tr> <tr><td>DESIGN ROOF HEIGHT</td><td>15.00 ft</td></tr> <tr><td>IMPORTANCE CLASS / FACTOR</td><td>III 1</td></tr> <tr><td>MIN. BLDG WIDTH</td><td>38 ft</td></tr> <tr><td>WIND-BORNE DEBRIS REGION</td><td>Yes</td></tr> <tr><td>PARAPET</td><td>No</td></tr> <tr><td>ROOF ANGLE</td><td>1.19 deg</td></tr> <tr><td>PROTECTED OPENINGS</td><td>Yes</td></tr> <tr><td>ROOF TYPE</td><td>Gable</td></tr> </table> </div> </div>			SYSTEM TYPE	Modified Bitumen	SYSTEM SCOPE	Modified Bitumen Cold	SURFACING	Coated Finish	ATTACHMENT METHOD	Insulation Adhesive	SUBSTRATE MATERIAL	Concrete	SUBSTRATE THICKNESS	4 in	FASTENER TYPE	N/A	FASTENER SAFETY FACTOR	N/A	ULTIMATE FASTENER PULLOUT	N/A lbs/screw	ALLOWABLE FASTENER PULLOUT	N/A lbs/screw	BASIC WIND SPEED	135 mph	EXPOSURE CATEGORY	B	TOPOGRAPHY FACTOR	1.00	BUILDING TYPE	Partially Enclosed	ROOF PITCH (X, Y)	0.25 12	RUN TO RIDGE	19	EAVE HEIGHT	12	DESIGN ROOF HEIGHT	15.00 ft	IMPORTANCE CLASS / FACTOR	III 1	MIN. BLDG WIDTH	38 ft	WIND-BORNE DEBRIS REGION	Yes	PARAPET	No	ROOF ANGLE	1.19 deg	PROTECTED OPENINGS	Yes	ROOF TYPE	Gable
SYSTEM TYPE	Modified Bitumen																																																			
SYSTEM SCOPE	Modified Bitumen Cold																																																			
SURFACING	Coated Finish																																																			
ATTACHMENT METHOD	Insulation Adhesive																																																			
SUBSTRATE MATERIAL	Concrete																																																			
SUBSTRATE THICKNESS	4 in																																																			
FASTENER TYPE	N/A																																																			
FASTENER SAFETY FACTOR	N/A																																																			
ULTIMATE FASTENER PULLOUT	N/A lbs/screw																																																			
ALLOWABLE FASTENER PULLOUT	N/A lbs/screw																																																			
BASIC WIND SPEED	135 mph																																																			
EXPOSURE CATEGORY	B																																																			
TOPOGRAPHY FACTOR	1.00																																																			
BUILDING TYPE	Partially Enclosed																																																			
ROOF PITCH (X, Y)	0.25 12																																																			
RUN TO RIDGE	19																																																			
EAVE HEIGHT	12																																																			
DESIGN ROOF HEIGHT	15.00 ft																																																			
IMPORTANCE CLASS / FACTOR	III 1																																																			
MIN. BLDG WIDTH	38 ft																																																			
WIND-BORNE DEBRIS REGION	Yes																																																			
PARAPET	No																																																			
ROOF ANGLE	1.19 deg																																																			
PROTECTED OPENINGS	Yes																																																			
ROOF TYPE	Gable																																																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>ZONE 1</th> <th>ZONE 2</th> <th>ZONE 3</th> <th>ZONE 4</th> <th>ZONE 5</th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td>ROOF PRESSURE (psf)</td> <td>25.8</td> <td>39.2</td> <td>55.8</td> <td>25.7</td> <td>30.2</td> <td></td> <td></td> </tr> <tr> <td>OVERHANG PRESSURE (psf)</td> <td>28.34</td> <td>28.34</td> <td>46.68</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>EDGE ZONE WIDTH "a" =</td> <td>3.80 ft</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>				ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5			ROOF PRESSURE (psf)	25.8	39.2	55.8	25.7	30.2			OVERHANG PRESSURE (psf)	28.34	28.34	46.68					EDGE ZONE WIDTH "a" =	3.80 ft																								
	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5																																															
ROOF PRESSURE (psf)	25.8	39.2	55.8	25.7	30.2																																															
OVERHANG PRESSURE (psf)	28.34	28.34	46.68																																																	
EDGE ZONE WIDTH "a" =	3.80 ft																																																			



The Garland Company, Inc.
Low Slope Roofing Wind Uplift Calculations
3800 East 91st Street
Cleveland, Ohio 44105-2197
Phone: (800) 321-9336 Fax (216) 883-2046

Project **Southern Connecticut State University (REV)**

Roof **Entrance**

Sales Rep. **Gordon Rossi**

Location **New Haven, CT**

Zone 1 psf **25.8**
(mid roof)

Zone 2 psf **39.2**
(eaves, ridge, hip)

Zone 3 psf **55.8**
(corners)

Edge Zone Width "a" **3** ft. **10** in.

Fastener Safety Factor **N/A**

Importance **III**

Importance Factor **1**

Wind Speed (mph) **135**

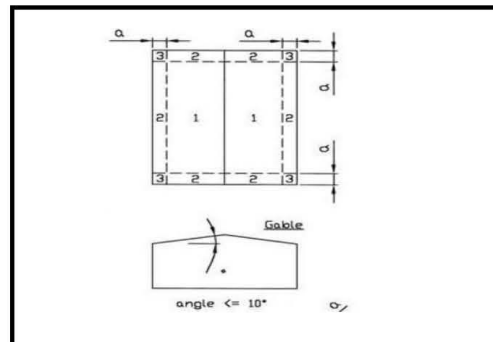
Ultimate Pullout Value (lbs/screw) **N/A**

Exposure Category **B**

Design Roof **15.00**

Minimum Building Width **38.00**

Roof Pitch (X, Y) **0.25** : **12**



System Type: **Modified Bitumen**

System Type: **Modified Bitumen**

Surfacing: **Coated Finish**

Attachment Method: **Cold**

Zone 1 **0.75"** wide beads
spaced **12"** o.c.
(mid roof) per 4' x 4' board

Zone 2 **0.75"** wide beads
spaced **12"** o.c.
(eaves, ridge, hip) per 4' x 4' board

Zone 3 **0.75"** wide beads
spaced **12"** o.c.
(corners) per 4' x 4' board

NOTES: Insulation adhesive was assumed to be Insul-Lock HR applied in 3/4" wide continuous ribbons spaced 12" o.c. per the attached diagram. Reference RoofNav Assembly #: 343600-224942-0.

EDGE SECUREMENT: Edge metal system must be ANSI/SPRI ES-1 compliant, as required by section 1504.5 of International Building Code. Edge metal system may be an ANSI/SPRI ES-1 compliant premanufactured system, or formed by a contractor certified to fabricate an ANSI/SPRI ES-1 compliant system.

*Unless specifically stated otherwise, these calculations are based on

ASCE 7-10 (American Society for Civil Engineers); if a specific building code is required, please specify.

*It is recommended to include the "Negative Uplift Pressures" in the specifications as well as the Safety Factor, Importance Factor, Building Category, Wind Speed, Ultimate Pullout Value, and Exposure.

*The Wind Speed is determined based upon geographical location.

*The Exposure and Importance Factors are needed to determine the uplift pressures.

If you have any questions, please call 800-321-9336 or respond to engineering@garlandind.com



The Garland Company, Inc.
Low Slope Roofing Wind Uplift Calculations
3800 East 91st Street
Cleveland, Ohio 44105-2197
Phone: (800) 321-9336 Fax (216) 883-2046

Project **Southern Connecticut State University(REV)**

Roof **Ballasted**

Sales Rep. **Gordon Rossi**

Location **New Haven, CT**

Zone 1 psf **25.8**
(mid roof)

Zone 2 psf **39.2**
(eaves, ridge, hip)

Zone 3 psf **55.8**
(corners)

Edge Zone Width "a" **3** ft. **11** in.

Fastener Safety Factor **3.00**

Importance **III**

Importance Factor **1**

Wind Speed (mph) **135**

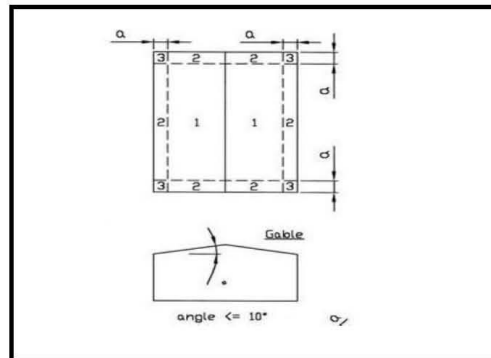
Ultimate Pullout Value (lbs/screw) **456**

Exposure Category **B**

Design Roof **30.00**

Minimum Building Width **39.00**

Roof Pitch (X, Y) **0.25** : **12**



System Type: **Modified Bitumen**

System Type: **Cold**

Surfacing: **Coated Finish**

Attachment Method: **Mech/ Fasten**

Zone 1	Zone 2	Zone 3
11 fasteners per	11 fasteners per 4'	22 fasteners per
4' x 8' board	(eaves, ridge, x 8' board	4' x 8' board
(mid roof)	hip)	(corners)

NOTES: Insulation adhesive was assumed to be Insul-Lock HR applied in 3/4" wide continuous ribbons spaced 12" o.c. in Zones 1 & 2, and 4" o.c. in Zone 3 per the attached diagram. Reference RoofNav Assembly #: 260095-2249396-0

EDGE SECUREMENT: Edge metal system must be ANSI/SPRI ES-1 compliant, as required by section 1504.5 of International Building Code. Edge metal system may be an ANSI/SPRI ES-1 compliant premanufactured system, or formed by a contractor certified to fabricate an ANSI/SPRI ES-1 compliant system.

*Unless specifically stated otherwise, these calculations are based on

ASCE 7-10 (American Society for Civil Engineers); if a specific building code is required, please specify.

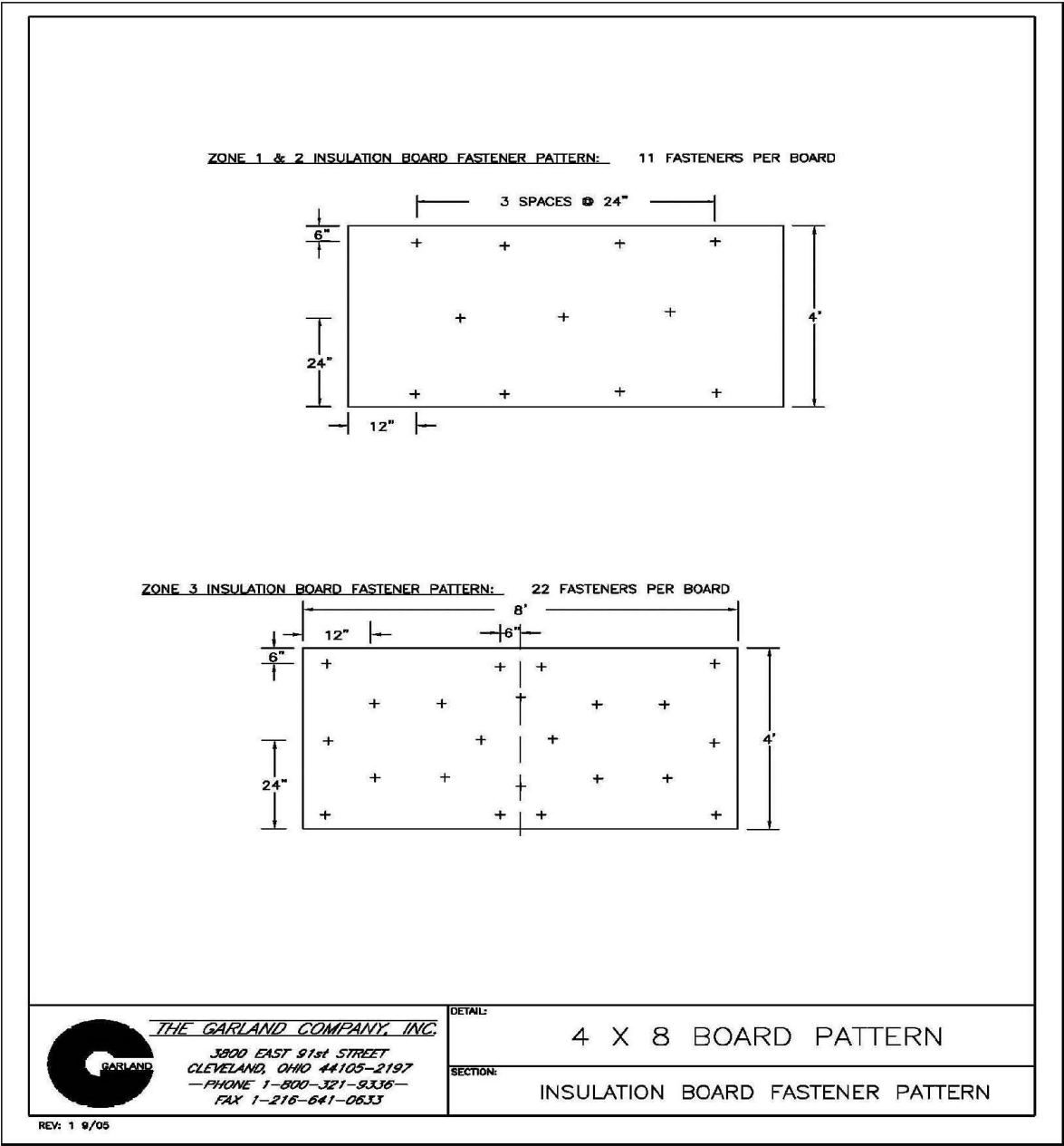
*It is recommended to include the "Negative Uplift Pressures" in the specifications as well as the Safety Factor, Importance Factor, Building Category, Wind Speed, Ultimate Pullout Value, and Exposure.

*The Wind Speed is determined based upon geographical location.

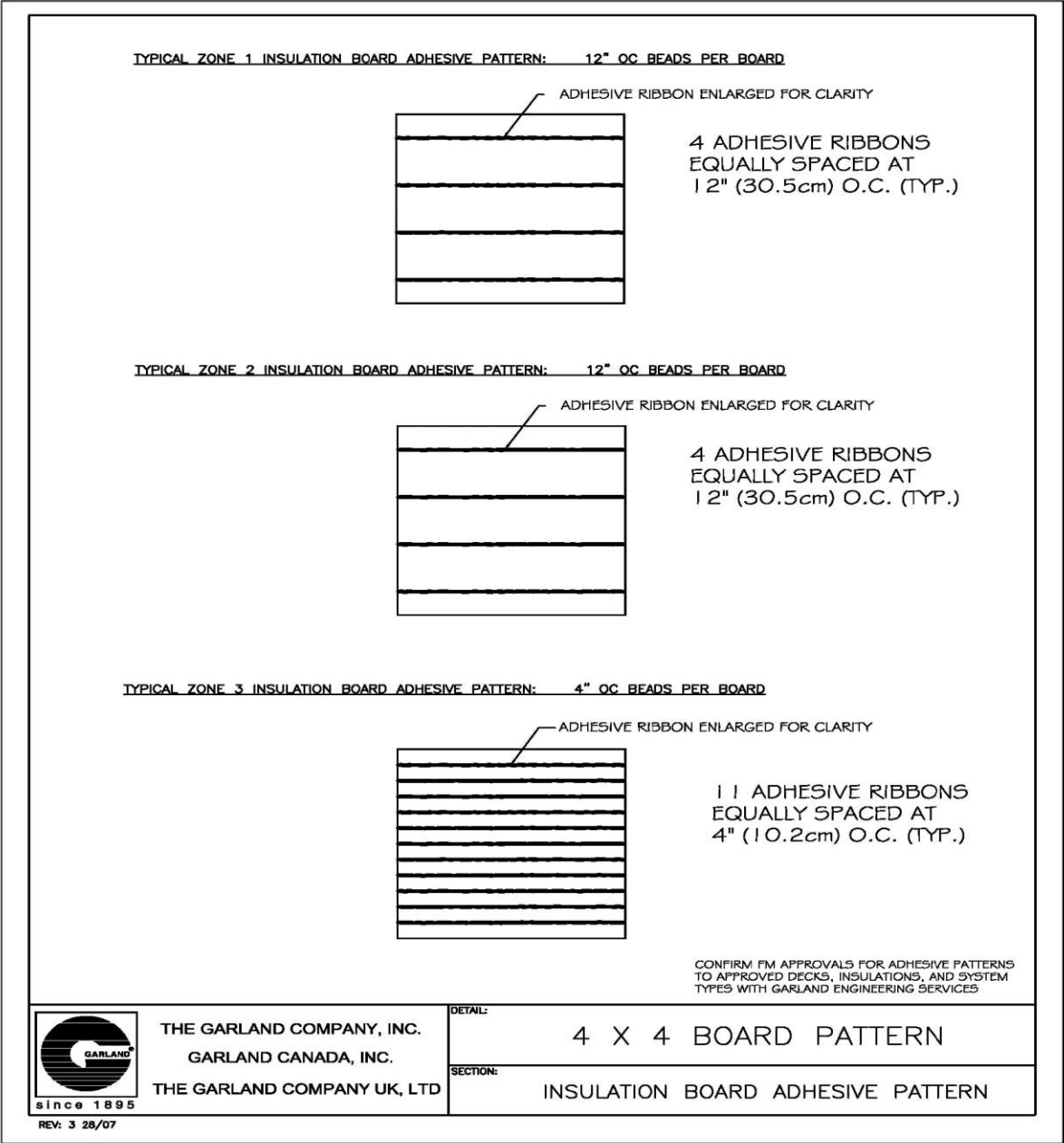
*The Exposure and Importance Factors are needed to determine the uplift pressures.

If you have any questions, please call 800-321-9336 or respond to engineering@garlandind.com


3800 East 91st Street, Cleveland, Ohio 44105-2197 Phone: (800) 321-9336



3800 East 91st Street, Cleveland, Ohio 44105-2197 Phone: (800) 321-9336



3800 East 91st Street, Cleveland, Ohio 44105-2197 Phone: (800) 321-9336

	PROJECT Southern Connecticut State University(REV)	
	ROOF SECTION Ballasted	
	DATE 6/11/2019	
	BASIC VELOCITY PRESSURE 27.78 psf	
		DESIGN CODE ASCE 7-10

System & Attachment Data		Building & Site Data	
SYSTEM TYPE	Modified Bitumen	BASIC WIND SPEED	135 mph
SYSTEM SCOPE	Modified Bitumen Cold	EXPOSURE CATEGORY	B
SURFACING	Coated Finish	TOPOGRAPHY FACTOR	1.00
ATTACHMENT METHOD	Mech/ Fasten Insul/Board	BUILDING TYPE	Partially Enclosed
SUBSTRATE MATERIAL	Steel	ROOF PITCH (X, Y)	0.25 12
SUBSTRATE THICKNESS	22 gauge	RUN TO RIDGE	19.5
FASTENER TYPE	Steel: OMG Standard	EAVE HEIGHT	30
FASTENER SAFETY FACTOR	3	DESIGN ROOF HEIGHT	30.00 ft
ULTIMATE FASTENER PULLOUT	456 lbs/screw	IMPORTANCE CLASS / FACTOR	III 1
ALLOWABLE FASTENER PULLOUT	152 lbs/screw	MIN. BLDG WIDTH	39 ft
		WIND-BORNE DEBRIS REGION	Yes
		PARAPET	No
		ROOF ANGLE	1.19 deg
		PROTECTED OPENINGS	Yes
		ROOF TYPE	Gable

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5
ROOF PRESSURE (psf)	25.8	39.2	55.8	25.7	30.2
OVERHANG PRESSURE (psf)	28.34	28.34	46.68		
EDGE ZONE WIDTH "a" =	3.90 ft				

3800 East 91st Street, Cleveland, Ohio 44105-2197 Phone: (800) 321-9336



750 Old Main Street, Rocky Hill, CT 06067
Phone: (860) 436-4336 • Fax: (860) 436-4450
www.rzdesignassociates.com

February 14, 2020

Friar Associates, Inc.
21 Talcott Notch Road, Suite 2
Farmington, CT 06032

Attn: **Mr. Bob Roach**

Re: Reroofing – Lyman Hall
Southern Connecticut State University
New Haven, Connecticut
Project No. 19-284

Mr. Roach:

As requested, on June 3, 2019 our office made a site visit to Southern Connecticut State University in New Haven, Connecticut. The purpose of our visit was to review and discuss the proposed new reroofing project for Lyman Hall, and to view the existing structural roof framing conditions in accordance to Item 1511.2 "Structural and Construction Loads" under Section 1511 "Reroofing" in the 2015 International Building Code, per the 2018 State of Connecticut Building Code.

Our review was based on limited visual observations, a copy of the March 2019 "Existing Conditions Report", the May 2019 "Lyman Hall Renovations Draft Report", the April 03, 2019 Lyman Hall Roof report authored by Mr. Gordon Rossi, a copy of Basement Floor Plan, First Floor Plan and Second Floor Plan dated 04/22/07, and a copy of the February 1994 "Reroofing of Lyman Center and Power Plant SCSU" drawings.

Per Mr. Rossi's April 03, 2019 report, the roof is divided into six (6) areas, Section A thru Section F. Currently Section A (the roof over the main auditorium) consists of an EPDM membrane over polyisocyanurate insulation supported by a Tectum and steel bulb tee deck system, supported by structural steel roof trusses. Section B consists of EPDM over polyisocyanurate supported by a concrete deck supported by open web steel joists and structural steel beams. Section C consists of a loose stone ballast on EPDM over polyisocyanurate supported by a metal roof deck supported by open web steel joists and structural steel beams. Section D consists of EPDM over polyisocyanurate supported by a Tectum and steel bulb tee deck system, supported by open web steel joists and structural steel girders. Section E consists of EPDM over polyisocyanurate supported by a Tectum and steel bulb tee deck system, supported by open web steel joists and structural steel girders. And Section F consists of EPDM over polyisocyanurate supported by a concrete deck supported by open web steel joists and structural steel beams. All gravity roof loads transfer to structural steel columns, supported on a conventional cast-in-place concrete foundation system.

-2-

February 14, 2020

Re: Reroofing – Lyman Hall
Southern Connecticut State University
New Haven, Connecticut
Project No. 19-284

The proposed reroofing project will include removing the existing roofing down to the top of the existing structural deck system. A vapor barrier will be installed (on the existing metal roof deck it will first include a 5/8" dens-deck mechanically fastened to the deck). New tapered insulation will be placed, and then a new two-ply modified bitumen roof system.

The Ultimate Design Wind Speed for the building per the current State of Connecticut Building Code is 135 mph (Risk Category III). The building is located in an urban and suburban area, and over 3-miles inland from Long Island Sound. The Surface Roughness Category is assumed to be 'B'. The assumed Wind Exposure Category is 'B'. The Enclosure Classification is assumed to be "Partially Enclosed", therefore, the Internal Pressure Coefficient is ± 0.55 per ASCE 7-10.

The results from wind analysis using Tekla Tedds structural software indicates a minimum allowable stress design (ASD) wind uplift pressure of -26.9 pounds per square foot (psf) over the body of the roof, -40.8 psf for areas of the roof within 14 ft. of the edge, and -58.2 psf for 14 ft. x 14 ft. areas at main building corners.

Pull tests were performed on random areas of the existing Tectum roofs (Section 'A' and Section 'D') by OMG Roofing products (153 Bowles Road in Agawam, Massachusetts). The results in the June 13, 2019 report (utilizing the OMG OlyLok fasteners) indicated an average ultimate pull value of 113 pounds. See The Garland Company, Inc.'s "Low Slope Roofing Wind Uplift Calculations" dated June 11, 2019 (which utilized a fastener safety factor of 3.0) for roofing attachment methods and spacing for each roof uplift zone.

The geometry of the building will not be changing with the reroofing project. Some water stains were visible around the underside of localized areas of the Tectum deck. The structural condition of the metal roof deck diaphragm and concrete roof deck appeared to be in satisfactory condition from our cursory observations. However, since our observations were extremely limited, once the top surface of the roof deck systems are exposed, a qualified deck inspector should verify the condition of all of the top deck surfaces.

All cementitious panel deck areas should be verified as having sufficient attachment and spans to meet the requirements of FM Global Property Loss Prevention Data Sheet 1-29 and the requirements of the selected RoodNav Assembly, and additional fasteners and supports added if needed.

-3-

February 14, 2020

Re: Reroofing – Lyman Hall
Southern Connecticut State University
New Haven, Connecticut
Project No. 19-284

All steel deck areas should be verified as having sufficient attachment to meet the requirements of FM Global Property Loss Prevention Data Sheet 1-29 and additional fasteners added if needed.

For areas of the Tectum deck that have been compromised/water stained [see Photo No. 1 as an example], the Tectum deck should be replaced by a new equivalent size/thickness Tectum deck, furnished and installed between the existing bulb tees for the same span (designed for a minimum 50 psf uniform load; 110 psf at areas of maximum snow drift).

Although the weight of the new two-ply modified roofing system will vary slightly based on the amount of tapered insulation, it will typically be within 3 psf of the original roofing system being



Photo No. 1: Localized Water Damaged Tectum – Above Auditorium Upper Catwalk

-4-

February 14, 2020

Re: Reroofing – Lyman Hall
Southern Connecticut State University
New Haven, Connecticut
Project No. 19-284

removed in Sections A, B, D, E and F, and approximately 10 – 14 psf less than the ballasted system in Section C. Per the current State of Connecticut Building Code, the minimum Flat-Roof Design Snow Load is 30 psf.

Based on our review, the existing framing appears to have adequate capacity to support the proposed new roofing system.

If you have any question or comments regarding our findings please do not hesitate to contact our office.

Sincerely,

Christopher H. Zajda

Christopher H. Zajda, P.E.

Section 50 60 00 FM Global Checklist for Roofing Systems

SAMPLE FM GLOBAL CHECKLIST FOR ROOFING SYSTEMS – page 1

CHECKLIST FOR ROOFING SYSTEM					
CONTACT INFORMATION:			INDEX NUMBER:		
ROOFING CONTRACTOR (NAME & ADDRESS)			TELEPHONE NO.:		FAX:
CLIENT (NAME & ADDRESS)			E-MAIL ADDRESS:		CONTACT:
			TELEPHONE NO.:		FAX:
			E-MAIL ADDRESS:		CONTACT:
OVERVIEW OF WORK: <i>(Submit 1 form per roof area)</i>					
Building Name & Number:					
Building Dimensions: Length:		ft/m;	Width:		ft/m;
Roof Slope:		Height			
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>					
<input type="checkbox"/> 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:					
<i>(Please provide ALL applicable details including trade name, type, number of plies, thickness, reinforced, adhesive)</i>					
<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:					
<i>(Please include Trade Name, Type, and Width)</i>					
<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			<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

CHECKLIST FOR ROOFING SYSTEM



<input type="checkbox"/> Other:
<input type="checkbox"/> None

DECK:

(Please include manufacturer, type, yield strength, thickness/gage, etc.)

<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:	

ROOF STRUCTURE (Include Size, Gage, Etc.):

<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:		

FASTENERS USED IN ROOF ASSEMBLY:

Roof Cover Fasteners: Trade Name:		Length:	Diameter:
Stress Plate/Batten:			
Spacing: Field:	X	Perimeter:	X
Insulation Fasteners: Trade Name:		Type:	
Size:		Stress Plate:	
Spacing: Field:		Perimeter:	Corners:
Deck Or Roof Panels Fasteners:		Type:	
Trade Name:		Size Washer:	
Length:		Washer:	
If Weld: Size:	Weld:	Washer:	
Deck Side Lap Fasteners: Field:	X	Perimeter:	X
Spacing: Field:	X	Perimeter:	X
Base Sheet Fasteners		Type:	
Trade Name:		Length:	
Head Diameter:		Perimeter:	
Spacing: (Attached Sketches as necessary)		Corners:	
Spacing Along Laps: Field:		Perimeter:	Corners:
No. Intermediate Rows: Field:		Perimeter:	Corners:
Spacing Along Intermediate Rows: Field:		Perimeter:	Corners:

PERIMETER FLASHING:

(Attach a detailed sketch of metal fascia, gravel stop, nailer, coping, etc.)

<input type="checkbox"/> FM Approved Flashing	<input type="checkbox"/> Per FM Global Loss Prevention Data Sheet 1-49
<input type="checkbox"/> Other:	Comments:

DRAINAGE:

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)

SAMPLE FM GLOBAL CHECKLIST FOR ROOFING SYSTEMS – page 3

CHECKLIST FOR ROOFING SYSTEM



FM Global OFFICE REVIEW
(Please leave blank for FM Global Office Review)

WIND:

Design Wind Speed: (mph)	Ground Terrain: <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D
Uplift Pressure in field: (psf)	Uplift Rating Required:
Adequate Uplift Rating Provided:	Adequate? <input type="checkbox"/> Yes <input type="checkbox"/> No

FIRE:

Internal Assembly Rating: <input type="checkbox"/> Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Non-Combustible	
External Fire Rating: <input type="checkbox"/> Class A <input type="checkbox"/> Class B <input type="checkbox"/> Class C <input type="checkbox"/> None	
Concealed Spaces? <input type="checkbox"/> Yes <input type="checkbox"/> No	Sprinklers below Roof? <input type="checkbox"/> Yes <input type="checkbox"/> No
Adequate? <input type="checkbox"/> Yes <input type="checkbox"/> No	

HAIL:

Hail Rating Needed? <input type="checkbox"/> SH <input type="checkbox"/> MH <input type="checkbox"/> None	Hail Rating Provided? <input type="checkbox"/> SH <input type="checkbox"/> MH <input type="checkbox"/> None
Adequate? <input type="checkbox"/> Yes <input type="checkbox"/> No	

COLLAPSE:

If standing seam, has collapse been reviewed? <input type="checkbox"/> Yes <input type="checkbox"/> No
--

COMMENTS:

X2688 ENGINEERING (Rev. January 2011)

Recommendations to Reduce Hazards during Installation:

From FM Global Plan review February 12, 2020

- Please avoid hot work if possible. If hot work cannot be avoided, hot work performed should be properly documented using FM Global's Hot Work Permit System. Please have fire extinguishers and hoses connected to hydrants when performing hot work as a fire protection precaution.
- Insist on prompt and safe disposal of combustible rubbish. Strict rules and an adequate number of cleanup personnel are essential to facilitate the removal of accumulations of paper/plastic packing and wrappings, scrap lumber, debris, and other construction rubbish. Prompt disposal is particularly necessary for materials subject to spontaneous ignition, such as rags used with ignitable liquids.
- Install only as much roof insulation that can be covered with roof covering in a single working day, or prior to the expected start of inclement weather. Seal loose roof cover edges at the end of each day to minimize potential moisture damage.
- Do not allow smoking on the roofs at any time. Smoking should be permitted only in safe designated areas provided with adequate disposal containers. Posted smoking policy signs should be provided throughout the area.
- Once the job is loaded with materials, it is FM Global's best advice to locate cover boards and insulation on dunnage. In addition, the cover boards and insulation should be covered at the end of each day to avoid moisture damage in potential rainstorms and snowstorms.
- Make a minimum of two 10 lb. ABC fire extinguishers available during the roof construction.
- The FM Global Red Tag Permit System should be used to monitor any sprinkler impairments if any are needed. All valve closures which impair existing fire protection should be closely coordinated with plant fire protection personnel and the Boston office of FM Global. Notification should be made to the Customer Service desk of FM Global at:

Phone: (1) 888 606 4570

Fax: (1) 888 381 4267

Email: ENGBostonCustomerServiceDesk@fmglobal.com

Web: <https://redetag.fmglobal.com/>

End of Section 50 60 00 FM Global Checklist for Roofing Systems