PROJECT MANUAL FOR
NORTHERN MAINE COMMUNITY COLLEGE
RE-ROOFING
PRESQUE ISLE, MAINE

A/E. COMM. NO. 3143.70

JUNE 6, 2008

OWNER: NORTHERN MAINE COMMUNITY COLLEGE
33 Edgemont Drive
Presque Isle, ME 04769

ARCHITECT: WBRC ARCHITECTS·ENGINEERS
44 Central Street
Bangor, Maine 04401

CONTRACTOR:

WBRC
ARCHITECTS • ENGINEERS

SECTION 1-A
SHORT FORM
INSTRUCTION TO BIDDERS

STATE PROJECTS

1. At the time of the opening of proposals, each bidder will be presumed to have inspected the site and to have read and to be thoroughly familiar with the plans and contract documents, including all addenda. The failure or omission of any bidder to receive or examine any form, instrument, or document shall in no way relieve any bidder from any obligation in respect to his proposal. The owner reserves the right to accept or reject any or all proposals as may best serve the interest of the owner.

2. Subject to the owner's right, reserved herein, to accept or reject any or all proposals, the general contractor will be selected on the basis of the sum of the lowest acceptable proposal plus such of the alternates as the owner desires to use.

3. The owner is exempt from the payment of Federal Excise Taxes on articles not to resale and the federal transportation tax on all shipments. The contractor shall quote less these taxes. Upon application, exemption certificates will be furnished when required.

4. Maine State Sales and Use Taxes should not be included in your quotation as the owner is exempt from the payment of such taxes.

5. No proposal may be withdrawn during a period of thirty (30) calendar days immediately following the opening thereof.

6. No contract may be assigned, sublet or transferred without the written consent of the owner.

7. No general contractor shall sublet more than 80% of the contract amount.

8. All foreign corporations intending to do business in the State of Maine must comply with provisions of 13-A M.R.S.A., Chapter 12. Any foreign corporation receiving notice of award of contract shall contact the Secretary of State for the purpose of complying with this statute.

All individual not residents of this State must comply with the provisions of Title 14 M.R.S.A., Section 704.

It may be necessary for the contractor to submit to the owner documentary evidence that the above provisions have been complied with.

9. The selected general contractor will be required to furnish a 100% contract performance bond and a 100% contract payment bond to cover the execution of his contract. Form of bonds are shown in section 2-C2 and 2-C3.

10. Contractors may be required to furnish a statement of their business experience, record of accomplishments, and financial responsibility at the discretion of the owner.

11. The owner shall retain five percent (5%) of each payment due the contractor as part security for the fulfillment of the contract by the contractor. The owner may, if he deems it expedient to do so, cause the contractor to be paid temporarily or permanently from time to time during the progress of the work the owner may at any time withhold further payments until the full amount of the five percent (5%) is reestablished, all in accordance with the provisions of Title 5, M.R.S.A., Section 1746.

Title 5, M.R.S.A., Section 1746 allows the contractor to deposit with the Treasurer of State certain government bonds in place of retention of payment due contractor in state contracts.

12. The proposal shall be based on the materials, methods, equipment and products as specified.

Any materials, methods, equipment or products not herein specified, but deemed worthy of consideration by any general contractor, may be introduced by a separate letter attached to his proposal. He shall state the cost comparison with the specified materials, methods, equipment or products and the reason for the suggested substitution.

It shall be understood by the general contractor or subcontractor that the attached letter describing the proposed change will not be used in determining the low general or subcontract proposal submitted unless the general or subcontractor shall have submitted their list to the architect/engineer 10 days prior to the date set for the receipt of their respective proposals and shall have received written approval by the architect/engineer.

13. Projects which require compliance with the Davis-Bacon Act are subject to the regulations contained in Title 29, Subtitle A, Part 5 of the Code for Federal Regulations and the federal wage determination attached to and made a part of these instructions to bidders.

14. Listing of job vacancies; Executive Order No. 5, dated December 6, 1971, requires that "... the contractor, or any subcontractor holding a contract directly under that contractor, shall, to the maximum feasible, list all of it's suitable openings with the Maine Department of Labor." This provision shall not apply to employment openings which the contractor proposes to fill from within its own organization.

Two copies of a "Quarterly Report of New Hires" shall be prepared by the 7th of January, April, July and October for the calendar quarter to which data pertains and sent to the local office of Maine Department of Labor, Bureau of Employment Security.

A copy of the reporting form is attached to these instructions to bidders. These may be obtained from the nearest office of the Maine Department of Labor serving the area.

Code of Fair Practices: Executive Order No. 11, dated July 1, 1972, requires that every state contract for public works contain the following provisions: "During the performance of this contract, the contractor agrees as follows:

1. The contractor will not discriminate against any employee or applicant for employment because of race, color, religious creed, sex, national origin, ancestry or age. Such action shall include, but not be limited to the following: Employment, upgrading, demotions, transfers , recruitment or recruitment advertising, layoffs or terminations, rates of pay or other forms of compensation, and selection for training including apprenticeship.

2. The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor state that all qualified applicants will receive consideration for employment without regard to race, color, religious creed, sex, national origin, ancestry, or age.

3. The contractor will send to each labor union or representative of the workers with which he has a collective or bargaining agreement, or other contract or understanding, whereby he is furnished with labor for the performance of his contract, a notice, to be provided by the contracting department or agency, advising the said labor union or worker's representative of the contractor's commitment under this section and shall post copies of the notice in conspicuous places available to employees and to applicants for employment."

The contractor will cause the foregoing provisions to be inserted in all contracts for any work covered by this agreement so that such provisions will be binding upon each subcontractor.

15. OSHA - Safety Regulations. This project is subject to compliance with all requirements of the Occupational Safety and Health Administration, Volume 36, No. 105 of the Federal Register, U.S. Department of Labor published Saturday, May 29, 1971, as amended.

16. Any proposal that contains an escalation clause will be invalid.

SUPPLEMENT TO SPECIAL PROVISIONS

EXECUTIVE ORDER #5

APPLICABLE TO "STATE CONTRACTORS AND SUBCONTRACTORS"

All state contracts negotiated on or after December 6, 1971 shall include a clause requiring the contractor, or any subcontractor holding a contract directly under that contractor, to the maximum feasible, to list all of its suitable openings with the Maine Department of Labor.

Such a clause will require the contractor and any subcontractor to list all job openings in his organization in Maine, whether the jobs are generated by the contract or not. Excepted from listing will be jobs which the contractor will fill:

1. Through promotion or transfer of employees already in his organization;

2. Through recall of former employees on layoff status;

3. Through a bona fide employer-union agreement which requires new hires to be made only through union sources.

The contract will not require hiring only from applicants referred by the Maine Department of Labor. The contractor will be free to make his own hiring decisions.

Reporting

To determine the effectiveness of the order in providing jobs for Vietman veterans, state departments and agencies, contractors and their subcontractors will be required to file quarterly reports with the Maine Department of Labor. These reports will indicate only the total number of individuals hired during the reporting period and the number of personnel hired who were Vietnam-era veterans (in service on or after August 5, 1964) who received other than a dishonorable discharge. Such reports will be due not later than the 7th day of the month following the end of each calendar quarter (e.g. April 7, 1972 for the quarter ending March 31, 1972). Report forms (sample attached) will be available from the Maine Department of Labor.

QUARTERLY REPORT OF NEW HIRES

(To be completed by federal contractors and subcontractors subject to Executive Order 11598)

	Number of Hires
1. Total New Hires	
2. Vietnam-Era Veterans Hired	
Quarter Ending:	Date Submitted:

These report forms are being supplied as a convenience to federal contractors and subcontractors to meet their reporting requirements on hires in accordance with federal regulations (41 CFR 50-250) implementing Executive Order 11598.

Instructions for Submittal of Report

Line 1 - Enter the total number of new hires, including Vietnam-era veterans, during the period covered.

Line 2 - Enter the number of Vietnam-era veterans hired during the period covered.

Two copies of this report should be submitted to the local office of the Maine Department of Labor serving the area by the 7th of the month following the calendar quarters to which data pertains. A contractor or subcontractor with more than one establishment in a state may submit the quarterly reports for all such establishments to the Maine Department of Labor, Bureau of Employment Security, 20 Union Street, 54 State House Station, Augusta, ME 04333-0054.

Definitions

(1) New hires are temporary or permanent additions to the employment roll or (a) anyone who has never been employed by the organization, or (b) former employees who were not called back by the employer or are not returning from military leave.

(2) Vietnam-Era Veteran. A veteran separated on or after August 5, 1964 and who has received other than a dishonorable discharge.

Any questions regarding this matter should be referred to the nearest office of the Department of Labor's Bureau of Employment Security.

SUBMITTED BY	
Name of Firm ☐	
Street Address ☐	Signature
City, State, Zip ☐	Title:

MA 5-82.1 (12/71)

SECTION 2-A

NOTICE TO BUILDING CONTRACTORS
(State Projects)
(Advertisement)

Sealed proposals, in envelopes plainly marked Proposal for: Northern Maine Community College – Re-Roofing, Presque Isle, Maine

Brief Job Description: The Work includes roof replacement at the Commons Building and the Penobscot, Aroostook, and Washington Residence Halls at Northern Maine Community of approximately 30,000 SF of existing built up roofing and asphalt shingles with new EPDM membrane and asphalt shingles, including structural upgrades and miscellaneous roof repairs. The work must be completed by August 22, 2008.

Addressed to: Northern Maine Community College
33 Edgemont Drive
Presque Isle, Maine 04769

will be opened and read aloud at Northern Maine Community College, Edmunds Conference Center, Continuing Education Conference Room at 2 PM, Thursday, June 26, 2008. Bids received 2 PM will not be considered and will be returned unopened.

General Contract proposal must be accompanied by a certified or cashier's check for 5% of the proposal or a satisfactory bid bond (2-C1) in a similar amount. The Owner reserves the right to waive all formalities, and reject any and all proposals or to accept any proposal. Proposal shall be submitted upon the form provided by the architect.

The selected general contractor will be required to furnish a 100% contract performance bond and a 100% contract payment bond to cover the execution of the work which shall be in conformity with the form of bonds contained in Section 2-C of the specifications and for the contract amount.

On or about June 9, 2008 Contractors may obtain Plans, Specifications and addenda (if any), which will be made a part of the Contract from the Architects, WBRC Architects·Engineers, at 44 Central Street, Bangor, Maine, phone (207) 947-4511, made payable to WBRC Architects·Engineers, upon non-refundable deposit (no cash accepted) of $35.00 per set, 5% sales tax included in this amount. No partial sets will be issued.

Plans and Specifications may be examined at:

HRH Northern New England
31 Court Street
P.O. Box 40
Auburn, Maine 04210

HRH Northern New England
260 Harlow Street
Bangor, ME 04401

Associated Constructors of Maine
P.O. Box 5519, Whitten Road
Augusta, Maine 04332-5519
Tel: (207) 622-4741

F.W. Dodge Company
224 Gorham Road
Scarborough, ME 04074

Works in Progress
c/o FMC CADD
75 Bishop Street, Suite 3
Portland, ME 04103

Construction Summary of New Hampshire
734 Chestnut Street
Manchester, NH 03104

SECTION 2-B
GENERAL CONTRACTOR PROPOSAL FORM

Northern Maine Community College

TO: Northern Maine Community College
33 Edgemont Drive
Presque Isle, Maine 04769

A. The undersigned, or "Bidder", having carefully examined the form of contract, general conditions, plans and specifications dated *June 6, 2008*, prepared by *WBRC Architects·Engineers* for *Northern Maine Community College – Re-Roofing*, as well as the premises and conditions relating to the work, proposes to furnish all labor, equipment and materials necessary for and reasonably incidental to the construction and completion of this project for the Base Bid amount of

_____ Dollars

$_____

The above amount includes the following allowances:
Cutting & Patching of Existing Construction Allowance $10,000

B. This proposal includes the Alternate prices as follows:

Alternate No.	Title of Alternate	
1	Flat roof area at south side of Reed Commons	Add: $_____
2	Penobscot, Aroostook, and Washington Residence Hall	Add: $_____
3	Penobscot Residence Hall	Add: $_____
4	Aroostook Residence Hall	Add: $_____
5	Washington Residence Hall	Add: $_____

C. The Bidder acknowledges receipt of the following addenda to the plans and specifications:

Addendum No. _____ Dated _____ Addendum No. _____ Dated _____

Addendum No. _____ Dated _____ Addendum No. _____ Dated _____

D. The Bidder agrees, if this proposal is accepted, to sign a contract and deliver it, with all bonds and affidavits of insurance specified in the bid documents, within twelve calendar days after the date of notification of such acceptance, except if the 12th day falls on a State of Maine holiday, a Saturday or Sunday, in which case the aforementioned documents must be received before 12:00 noon on the day following the holiday, or the Monday following the Saturday or Sunday. As a guarantee thereof,

the Bidder herewith submits a bid bond or certified or cashiers check as required by the bid documents.

E. This proposal is hereby submitted by:

Signature: _____

Printed name and title: _____

Company name: _____

Mailing address: _____

City, state, zip code: _____

Phone number: _____

Email address: _____

State of incorporation, if a corporation: _____

List of all partners, if a partnership: _____

SECTION 2-C1
SHORT FORM

FORM OF GENERAL CONTRACT BID BOND

KNOW ALL MEN BY THESE PRESENTS, THAT WE, THE UNDERSIGNED, (1)_____
_____, (2)_____
AS PRINCIPAL, AND (3)_____

AS SURETY, ARE HEREBY HELD AND FIRMLY BOUND UNTO (4)_____
_____IN THE PENAL SUM OF_____

FOR THE PAYMENT OF WHICH, WELL AND TRULY TO BE MADE, WE HEREBY JOINTLY AND SEVERALLY BIND OURSELVES, OUR HEIRS, EXECUTORS, ADMINISTRATORS, SUCCESSORS AND ASSIGNS, SIGNED THIS (5)_____DAY OF_____20_____.

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH THAT WHEREAS THE PRINCIPAL HAS SUBMITTED TO (6) OWNER_____
_____
TO A CERTAIN PROPOSAL, ATTACHED HERETO AND HEREBY MADE A PART HEREOF, TO ENTER INTO A CONTRACT IN WRITING, FOR THE CONSTRUCTION OF (7)_____
_____
NOW THEREFORE:

(a)IF SAID PROPOSAL SHALL BE REJECTED, OR, IN THE ALTERNATE,

(b)IF SAID PROPOSAL SHALL BE ACCEPTED AND THE PRINCIPAL SHALL EXECUTE AND DELIVER A CONTRACT IN THE FORM OF CONTRACT ATTACHED HERETO (PROPERLY COMPLETED IN ACCORDANCE WITH SAID PROPOSAL) AND SHALL FURNISH A BOND FOR HIS FAITHFUL PERFORMANCE OF SAID CONTRACT, AND FOR THE PAYMENT OF ALL PERSONS PERFORMING LABOR OR FURNISHING MATERIAL IN CONNECTION THEREWITH, AND SHALL IN ALL OTHER RESPECTS PERFORM THE AGREEMENT CREATED BY THE ACCEPTANCE OF SAID PROPOSAL, THEN THIS OBLIGATION SHALL BE VOID, OTHERWISE THE SAME SHALL REMAIN IN FORCE AND

EFFECT: IT BEING EXPRESSLY UNDERSTOOD AND AGREED THAT THE LIABILITY OF THE SURETY FOR ANY AND ALL CLAIMS HEREUNDER SHALL, IN NO EVENT, EXCEED THE PENAL AMOUNT OF THIS OBLIGATION AS HEREIN STATED.

THE SURETY, FOR VALUE RECEIVED HEREBY STIPULATES AND AGREES THAT THE OBLIGATION OF SAID SURETY AND ITS BONDS SHALL BE IN NO WAY IMPAIRED OR AFFECTED BY ANY EXTENSION OF THE TIME WITHIN WHICH THE PRINCIPAL MAY ACCEPT SUCH PROPOSAL: AND SAID SURETY DOES HEREBY WAIVE NOTICE OF ANY SUCH EXTENSION.

IN WITNESS WHEREOF, THE PRINCIPAL AND THE SURETY HAVE HEREUNTO SET THEIR HANDS AND SEALS, AND SUCH OF THEM AS ARE CORPORATIONS HAVE CAUSED THEIR CORPORATE SEALS TO BE HERETO AFFIXED AND THESE PRESENTS TO BE SIGNED BY THEIR PROPER OFFICERS, THE DAY AND YEAR FIRST SET ABOVE.

SIGNED AND SEALED THIS (5)_____DAY OF_____20____.

WITNESS: CONTRACTOR:_____

_____BY_____(L.S.)

_____BY_____(L.S.)

_____BY_____(L.S.)

WITNESS: SURETY:_____

_____BY_____(L.S.)

_____BY_____(L.S.)

APPROVED AS TO FORM_____, 20_____.

BY_____
(Owner's Attorney)

Legend
(1)Correct name of contractor.
(2)A corporation, a partnership, or an individual, as the case may be.
(3)Correct name of surety.
(4)Treasurer of the State of Maine.
(5)Same date as that of contract.
(6)Owner shall be the State of Maine.
(7)Name of project as designated in the contract documents.

If contractor is partnership, all partners should execute bond. A power of attorney document together with a statement that it still is in full force and effect shall be provided by the person executing this bond. Bond must be countersigned by a resident Maine agent.

SECTION 2-C2

SHORT FORM
FORM OF GENERAL CONTRACT PERFORMANCE BOND
(State Projects)

KNOW ALL MEN BY THESE PRESENTS THAT (1)_____

_____, (2)_____

OF_____AND STATE OF_____AS

PRINCIPAL, AND (3)_____

A CORPORATION DULY ORGANIZED UNDER THE LAWS OF THE STATE OF_____

AND HAVING A USUAL PLACE OF BUSINESS IN_____AS SURETY,

ARE HELD AND FIRMLY BOUND UNTO THE (4)_____

IN THE SUM OF_____DOLLARS ($_____),

TO BE PAID SAID (4)_____

OR HIS SUCCESSORS IN OFFICE, FOR WHICH PAYMENT WELL AND TRULY TO BE MADE, PRINCIPAL AND SURETY BIND THEMSELVES, THEIR HEIRS, EXECUTORS AND ADMINISTRATORS, SUCCESSORS AND ASSIGNS, JOINTLY AND SEVERALLY BY THESE PRESENTS.

THE CONDITION OF THIS OBLIGATION IS SUCH THAT IF THE PRINCIPAL SHALL PROMPTLY AND FAITHFULLY PERFORM THE CONTRACT ENTERED INTO ON THE

(5)_____DAY OF_____A.D. 20_____FOR THE CONSTRUCTION OF

(6)_____

THEN THIS OBLIGATION SHALL BE NULL AND VOID: OTHERWISE, IT SHALL REMAIN IN FULL FORCE AND EFFECT.

THE SURETY HEREBY WAIVES NOTICE OF ANY ALTERATION OR EXTENSION OF TIME MADE BY THE (7) OWNER.

SIGNED AND SEALED THIS (5)_____DAY OF_____20_____.

WITNESSES: CONTRACTOR:_____

_____BY_____(L.S.)

_____BY_____(L.S.)

_____BY_____(L.S.)

WITNESSES: SURETY:_____

_____BY_____L.S.)

_____BY_____(L.S.)

APPROVED AS TO FORM_____, 20_____.

BY_____
(Owner's Attorney)

Legend

(1)Correct name of contractor.
(2)A corporation, a partnership, or an individual, as the case may be.
(3)Correct name of surety.
(4)Treasurer of the State of Maine.
(5)Same date as that of contract.
(6)Name of project s designated in the contract documents.
(7)Owner shall be the State of Maine.

If contractor is partnership, all partners should execute bond. A power of attorney document, together with a statement that it still is in full force and effect shall be provided by the person executing this bond. Bond must be countersigned by a Resident Maine Agent.

SECTION 2-C3
SHORT FORM
FORM OF GENERAL CONTRACT PAYMENT BOND
(State Projects)

KNOW ALL MEN BY THESE PRESENTS THAT (1)_____

_____(2)_____

OF_____AND STATE OF_____

AS PRINCIPAL AND (3)_____

A CORPORATION DULY ORGANIZED UNDER THE LAWS OF THE STATE OF_____

AND HAVING A USUAL PLACE OF BUSINESS IN_____AS SURETY ARE

HELDAND FIRMLY BOUND UNTO THE (4)_____IN THE SUM

OF _____DOLLARS, ($_____) FOR THE USE

AND BENEFIT OF CLAIMANTS* AS HEREIN BELOW DEFINED, FOR THE PAYMENT

WHEREOF PRINCIPAL AND SURETY BIND THEMSELVES, THEIR HEIRS, EXECUTORS AND

ADMINISTRATORS, SUCCESSORS AND ASSIGNS, JOINTLY AND SEVERALLY BY THESE

PRESENTS.

THE CONDITION OF THIS OBLIGATION IS SUCH THAT IF THE PRINCIPAL SHALL

PROMPTLY SATISFY ALL CLAIMS AND DEMANDS INCURRED FOR ALL LABOR AND

MATERIALS, USED OR REQUIRED BY HIM IN CONNECTION WITH THE WORK

CONTEMPLATED IN THE CONTRACT ENTERED INTO ON THE (5)_____DAY

OF_____A.D. 20_____ FOR THE CONSTRUCTION OF (6)_____

_____

AND SHALL FULLY REIMBURSE THE OBLIGEE FOR ALL OUTLAY AND EXPENSE WHICH

SAID OBLIGEE MAY INCUR IN MAKING GOOD ANY DEFAULT OF SAID PRINCIPAL, THEN

THIS OBLIGATION SHALL BE NULL AND VOID: OTHERWISE, IT SHALL REMAIN IN FULL

FORCE AND EFFECT.

* A claimant is defined as one having a direct contract with the principal or with a subcontractor of the principal for labor, material, or both, used or reasonably required for use in the performance of the contract.

SIGNED AND SEALED THIS (5)_____DAY OF_____20____.

WITNESS: CONTRACTOR:_____

_____BY_____(L.S.)

_____BY_____(L.S.)

_____BY_____(L.S.)

WITNESS: SURETY:_____

_____BY_____(L.S.)

_____BY_____(L.S.)

APPROVED AS TO FORM_____, 20_____.

BY_____
(Owner's Attorney)

Legend

(1)Correct name of contractor.
(2)A corporation, a partnership, or an individual, as the case may be.
(3)Correct name of surety.
(4)Treasurer of the State of Maine.
(5)Same date as that of contract.
(6)Name of project as designated in the contract documents.

If contractor is partnership, all partners should execute bond. A power of attorney document, together with a statement that it still is in full force and effect shall be provided by the person executing this bond. Bond must be countersigned by a Resident Maine Agent.

SECTION 2-E

CONTRACT AGREEMENT-SHORT FORM
(State Project)
(Use when contract value is more than $50,000)

THIS AGREEMENT made the of in the year by and between the State of Maine through the hereinafter called the *Owner,* duly authorized and empowered by virtue of the laws of the State of Maine and hereinafter called the *Contractor.*

Appropriation No.

BGS Project No.
WITNESSETH,

That the owner and the contractor for the consideration hereinafter named agree as follows:

ARTICLE 1. SCOPE OF WORK

The *Contractor* shall furnish all of the materials and perform all the work shown on the plans and described in the specifications entitled:

Prepared by _____ acting as Designer and in the documents entitled the architect and/or engineer, and shall do everything required by this agreement, the general conditions and special provisions of the contract, the specifications and the drawings.

ARTICLE 2. TIME OF COMPLETION

The work to be performed under this contract shall be completed on or before August 22, 2008.

ARTICLE 3. THE CONTRACT SUM

The *Owner* shall pay the contractor for the performance of the contract, subject to additions and deductions provided by approved change orders in current funds as follows:

ARTICLE 4. CONTRACT BONDS

The Contractor shall furnish the owner the approved contract bonds (as per Article 27 of the Standard General Conditions) in the amount of 100% of the contract amount.

ARTICLE 5. PROGRESS PAYMENTS

The owner shall make payments on account of the contract as provided therein as follows: Each month 95% of the value, based on contract prices of labor and materials incorporated in the work and of materials suitably stored at the site thereof up to the first day of that month, as certified by the architect and/or engineers.

The owner may cause the contractor to be paid such portion of the amount retained hereunder as he deems advisable. (See Article 24 of the Standard General Conditions (Sec. 3-A)

ARTICLE 6. FINAL PAYMENT

Final payment shall be due 30 days after completion and acceptance of the work, provided the contractor has submitted evidence satisfactory to the owner that all payrolls, material bills and other indebtedness connected with the work has been paid.

ARTICLE 7. THE CONTRACT DOCUMENTS

The general conditions of the contract, instructions to bidders, the proposal, the special provisions, the specifications and the drawings, together with this agreement, form the contract, and they are as fully a part of the contract as if hereto attached or herein repeated. The following is an enumeration of the specifications and the drawings.

SPECIFICATIONS:

ADDENDA:

DRAWINGS:

The owner and the contractor hereby agree to the full performance of the covenants herein.

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

Contractor

WITNESS:

_____ *By:*_____

Date

STATE OF MAINE

Department

*By:*_____

Date

Bureau of General Services

*By:*_____

Date

APPROVED BY:

_____

Joseph Ostwald *Date*

Director, Planning, Design & Construction

SECTION 3-A

STATE OF MAINE

STANDARD GENERAL CONDITIONS
FOR
CONTRACT WORK
ON STATE PROJECTS

INDEX TO ARTICLES OF GENERAL CONDITIONS

ARTICLE 1. **DEFINITIONS**

Whenever the following terms are used in these specifications or the contract, the intent and meaning shall be interpreted as follows:

Architect: The project architect and/or engineer whose name appears on the plans and/or specifications for the project, acting directly or through an authorized representative.

Bid Security: The security designated in the proposal, furnished by bidders as a guaranty of good faith to enter into a contract with the state, should a contract be awarded to that bidder.

Bidder: Any individual, partnership, or corporation submitting a proposal for the performance of the work described under the terms of the contract, acting directly or through a duly authorized representative.

Bureau: The Bureau of General Services

Calendar Days: Consecutive days, as occurring on a calendar, taking into account the day of the week, month, year, and any religious, national, or local holidays.

Change Order: A written agreement between the owner and the contractor, operating as a supplement to the contract, covering correction of: omissions, errors, and discrepancies between the plans and the proposal or estimates; or any alterations in the plans; or additional requirements; work, materials, and incidentals required to complete the construction of the project in an acceptable manner, and setting forth the basis of compensation for that supplemental work, if any. Before any change order modifies or becomes a part of the work, it must be duly signed by the contractor, and the owner, and approved by the Bureau of General Services and the architect.

Contract: A written agreement between the owner and the successful bidder, by which the contractor is bound to perform the work specified, in accordance with plans, specifications, general conditions, and special provisions, that are a part of the contract documents, together with all supplemental agreements by which the owner is bound to compensate the contractor at mutually established and accepted rates or prices.

Contract Bond: The approved forms of security furnished by the contractor and his surety, or sureties, which guarantee the faithful performance of all the terms of the contract and the payment of all bills for labor, materials, and equipment by the contractor.

Contract Documents: The contract documents consist of the contract, general conditions, special provisions, the plans and specifications including all addenda and all other modifications thereof, that were incorporated in the documents prior to their execution.

Contractor: The individual, partnership, or corporation undertaking the execution of the general contract work under the terms of the contract with the owner, acting directly or through a duly authorized representative.

Director of the Bureau of General Services: The state director of the Bureau of General Services or her duly authorized representative.

Owner: The State of Maine, acting through its duly authorized representative.

Plans: All official drawings or reproductions of drawings pertaining to the work provided for in the contract and such working plans as may be furnished or approved by the owner or architect from time to time.

Project: The entire improvement proposed by the owner to be constructed in part or in whole pursuant to these specifications and contract documents. Where the word "Job" appears it shall mean the project.

Proposal or Bid: The written offer of the bidder, on a form prescribed to perform the work specified.

Provide: The word "provide" shall mean "furnish and install," including connections to services if required, unless specified otherwise.

Clerk of the Works: The authorized representative of the Architect.

State: The State of Maine, acting through its duly authorized representative.

Subcontractor: The individual, the firm or corporation undertaking the execution of any part of the work under the terms of the contract by virtue of a written agreement between itself and the contractor.

Superintendent: The representative of the contractor, authorized by the contractor to receive and fulfill instructions from the architect.

Supplemental Agreement: A supplemental agreement is any agreement entered into between the contractor and the owner with the approval of the bureau and the architect subsequent to the execution of the contract.

Surety: The individual, partnership, or corporation which is bound jointly and severally with the contractor and subcontractor to insure his faithful performance of the contract and for his payment of the bills for labor, materials and equipment by the contractor and subcontractors.

ARTICLE 2. INTENT, CORRELATION AND EXECUTION OF DOCUMENTS

The intent of the contract document is to prescribe a complete work or improvement. The plans, including all revisions, general conditions for contract work, special provisions, instructions to bidders, proposal, contract, contract bond, and all other sections of the specifications, including all addenda, all dated and on file in the Bureau of General Services, prior to the time set for receiving proposals as prepared by the architect, shall each become a part of the contract documents, and all proposals must be based on a full compliance therewith. Any supplemental agreements entered into subsequent to the contract will become a part of said contract.

The contract documents are complementary, and what is called for by any one shall be binding as if called for by all. The intention of the document is that , UNLESS OTHERWISE SPECIFIED, the contractor shall furnish all labor, materials, equipment, items, articles, tools, transportation, insurance, services, necessary supplies, operations or methods and incidentals that may be reasonably required to construct and complete the project, facility, or improvement in a manner necessary for the proper execution of the work. Any deviations from the plans which may be required by the exigencies of the construction, or because of error, will in all cases, be determined by the architect, and authorized in writing subject to approval by the owner and bureau. Materials or work described in words which, so applied, have a well-known technical or trade meaning shall be held to refer to such recognized standards. Since the plans and specifications cover the dimensions and features of the work and do not set forth the analysis of the design, it is the duty of the contractor fulfilling them to ascertain the true intent in any case where it is doubtful.

Work not covered under any heading, section, branch, class, or trade of the specifications, shall not be supplied unless it is shown on the drawings or is reasonably inferable therefrom as being necessary to produce the intended results.

The contractor shall take no advantage of any apparent error or omission in the plans and specifications, and the architect shall be permitted to make such corrections and interpretations as may be deemed necessary for the fulfillment of the intent of the plans and specifications. Where errors or omissions appear in the contract documents, the contractor shall promptly notify the architect in writing of such errors or omissions. Inconsistencies in the contract documents are to be reported before proposals are received, whenever found.

The Contractor shall, upon his acceptance of a contract and before commencing work, contact the architect and request a preconstruction conference. The purpose of this conference shall be as follows:

1. To introduce the members of the architectural firm and the representative of the owner and to define their responsibilities in connection with this project.

2. To emphasize any special provisions applicable to the project.

3. To establish the work progress schedule and set up procedures for prompt review of all required shop drawings.

4. To provide the contractor with opportunity to discuss points of doubt and any apparent inconsistencies noted in the plans and specifications before proceeding to purchase material or execute the work.

During the further progress of work, regular meetings will be held at time intervals appropriate in the judgment of the architect to review the work progress schedule, general project progress and any other questions which might affect the execution of the contract.

ARTICLE 3: DETAIL DRAWINGS AND INSTRUCTIONS

The architect shall furnish, with reasonable promptness, additional instructions by means of drawings or otherwise, that are necessary for the proper execution of the work. All such drawings and instruction shall be consistent with the contract documents, shall be true developments thereof, and shall be reasonably inferable therefrom.

The work shall be executed in conformity therewith and the contractor shall do no work without proper drawings and instructions.

Immediately after being awarded the contract, the contractor shall prepare an estimated progress schedule and submit same for architect's approval. It shall indicate the dates for starting and completion of the various stages of construction.

ARTICLE 4: COPIES FURNISHED

Unless otherwise provided in the contract documents, the contractor will be furnished, free of charge, copies of all drawings and specifications reasonably necessary for the execution of the work.

ARTICLE 5: SHOP DRAWINGS

The contractor shall check and verify all field measurements and shall submit with such promptness as to cause no delay in the contractor's own work or in that of any other contractor, adequate copies, checked and approved by the contractors of all shop drawings and schedules required for the work of the various trades. The architect shall check and approve, with reasonable promptness, such scheduled drawings only conformance with the design concept of the project and compliance with the information given in the contract documents. The contractor shall make any corrections required by the architect, and shall file with the architect two corrected copies, and shall furnish such other copies as may be needed. The architect's approval of such drawings or schedules shall not relieve the contractor from responsibility for deviations from drawings or specifications, unless the contractors have, in writing, called the architect's attention to such deviations at the time of submission and secured the architect's written

approval; nor shall it relieve the contractors from responsibility for errors in shop drawings or schedules.

ARTICLE 6: DRAWINGS AND SPECIFICATIONS

The contractor shall keep, in good order, one copy of all drawings and specifications on the work, which will be made available to the architect and to his representative.

ARTICLE 7: OWNERSHIP OF DRAWINGS

All drawings, specifications and copies thereof furnished by the architect are the property of the architect. They are not to be used on other work without written permission from the architect, and, with the exception of the signed contract set, are to be returned to the architect upon request, or at the completion of the work.

ARTICLE 8: SAMPLES

The Contractor shall furnish for approval, with reasonable promptness, all samples as directed by the architect. The architect shall check and approve such samples, with reasonable promptness, only for conformance with the design concept of the project and for compliance with the project and for compliance with the information given in the contract documents. The work shall be in accordance with approved samples.

ARTICLE 9: MATERIALS, APPLIANCE, EMPLOYEES

Unless otherwise stipulated, the contractor shall provide and pay for all materials, labor, water, tools, equipment, light, power, transportation, and facilities necessary for the execution and completion of the work.

Whenever an article or material is defined by describing a proprietary product, or by using the name of a manufacturer, the term "Or Approved Equal", if not inserted, shall be implied. The specific article or material mentioned shall be understood to establish minimum standards as to the type, function, standard of design, durability, efficiency and quality desired and shall not be construed to exclude other manufacturers' products of comparable quality, design, and efficiency.

Materials and models of items which the contractor alleges to be equal to the materials and methods of items named in the specifications, shall be subject to the written approval by the architect/engineer. If the alleged equals are to receive consideration in the bid award, written approval shall be received from the architect/engineer at least ten days prior to the established bid opening dates. The use of alternate items will not be permitted without the approval of the owner and architect. All approved substitutions shall be in writing and approved by the architect. The contractor shall not be relieved of the responsibility to furnish articles or materials equal in quality, design, and efficiency to those specified because of the approval of such alternate items by the architect. The architect's approval or rejection of a proposed substitution may be based on

any of the previous considerations, and his decision may or may not express reasons for rejection and shall be final. Requests for substitutions shall originate and be submitted by the contractor, not a subcontractor. The materials or equipment shall be sufficiently described to enable the architect to easily identify salient features.

Any material or products not specified in the bidding documents but being worthy of consideration may be introduced by the contractor, or subcontractor. The contractor's submission shall include a cost comparison with the specified material and the reason for the suggested substitution. The basic proposal shall be as specified.

It shall be understood by the general contractor or subcontractor that the attached letter describing the proposed changes will not be used in determining the low general contractor or subcontractor proposal submitted, unless the general contractor or subcontractor has submitted its list to the architect/engineer 10 days prior to the date set for the receipt of their respective proposals and has received written approval by the architect/engineer five days prior to the opening of the bid.

The contractor shall guarantee his work against any defects in workmanship and materials for a period of one year from the date of the written acceptance of the project.

Materials and equipment shall be new, free from defects, perfect and complete, unless otherwise stipulated. Materials or equipment specified or shown on the drawings shall be applied or installed according to the directions with the manufacturer, or the recommendations of an association dealing primarily with the material, unless specifically designated otherwise. The scope of the direction furnished shall include the application of experienced personnel to each trade involved. In no case shall the installation be below the standard recommended by the manufacturer or association.

The contractor shall be responsible to the owner for the suitability of materials and equipment furnished and for full compliance with the specification.

The contractor shall promptly pay all his employees when their pay is due, shall promptly pay when due all bills for materials, supplies and services going into the work, and all bills for insurance, workmen's compensation coverage, federal and state unemployment compensation, and Social Security charges applicable to said project. Before final settlement is made, the contractor shall furnish to the owner affidavits that all said payments have been made.

The contractor shall at all times enforce strict discipline and good order among his employees, and shall not employ on thc work any unfit person or anyone not skilled in the work assigned to him.

ARTICLE 10: **ROYALTIES AND PATENTS**

The contractor shall, for all time, secure to the owner the free and undisputed right to the use of any and all patented articles or methods used in the work and shall defend at his own

expense any and all suits for infringement or alleged infringement of such patents, and in the event of adverse award under patent suits, the contractor shall pay such awards and hold the owner harmless in connection with any patent suits that may arise as a result of installations made by the contractor, or to any awards made thereunder.

ARTICLE 11: SURVEYS, PERMITS, LAWS, TAXES AND REGULATIONS

The owner shall furnish all surveys unless otherwise specified.

Permits and licenses necessary for the prosecution of the work shall be secured and paid for by the contractor. Easements for permanent structures or permanent changes in existing facilities shall be secured and paid for by the owner, unless otherwise specified.

The contractor shall give all notices and comply with all laws, ordinances, rules and regulations bearing on the conduct of the work as drawn and specified. If the contractor observes that the drawings and specifications are at variance therewith, the contractor shall promptly notify the architect in writing and any necessary changes shall be adjusted as provided in the contract for changes in the work. If the contractor performs any work knowing it to be contrary to such laws, ordinances, rules and regulations and without such notice to the architect, the contractor shall bear all costs arising therefrom.

Adherence to the codes promulgated by the BOARD OF CONSTRUCTION SAFETY RULES AND REGULATIONS is required by statute. Copies of the latest rules and regulations may be obtained from the Department of Labor, 54 State House Station, Augusta, Maine 04333-0054.

The State is exempt from the payment of Federal Excise Taxes on articles not for resale and from the Federal Transportation Tax on all shipments. All quotes from the contractor and subcontractors shall be free of these taxes. The State is exempt from the payment of Maine State Sales and Use Taxes. All quotes from the contractor and subcontractors shall be free of these taxes.

ARTICLE 12: LABOR AND WAGES

All contractors and subcontractors shall conform to the labor laws of the State of Maine, and all other laws, ordinances, and legal requirements affecting the work in Maine.

If a wage scale prepared by the Department of Labor is included in the contract documents, such wage scale represents the minimum wages that must be paid to each category of labor employed on the project.

For projects requiring State prevailing wage rates, at the Preconstruction Conference the Architect shall inform the General Contractor of the statutory requirement to submit to the contracting agency monthly records identifying the names and occupation of all workers employed by them and all independent contractors working under contract with them in

connection with the construction project, as required by Maine State Law and Rule. The monthly submission must include hours worked, title of the job, hourly rate or other method of remuneration, and the actual wages or other compensation paid to each.

The submitted records may not reveal information other than described above, such as Social Security number employee identification number, or employee address or phone number. If records are received with information other than described above, they will be returned to the General Contractor for revision and resubmission.

In the employment of laborers, preference shall first be given to residents of the State of Maine who are qualified to perform the work to which the employment relates, and if they cannot be obtained in sufficient numbers, then to citizens of the United States, who may reside in other states.

ARTICLE 13: CONDITIONS AND CARE OF SITE AND PROTECTION OF THE WORK

The contractor shall continuously maintain adequate protection of all work from damage and shall protect the property from injury or loss for the duration of this contract, and shall make good any such damage, injury or loss. The contractor shall adequately protect adjacent property as provided by law and the contract documents.

The contractor shall take all necessary precautions for the safety of employees on the work, and shall comply with all applicable provisions of federal, state, and municipal safety laws and buildings codes, and shall prevent accidents or injury to person on, about, or adjacent to the premises where the work is being performed. The contractor shall erect and properly maintain all necessary safeguards for the protection of workmen and the public at all times, as required by the condition and progress of the work, and shall post danger signs warning against all hazards created by the construction process, such as (but not limited to) protruding nails, hoists, well holes, elevator hatchways, scaffolding, window openings, stairways, and falling materials. The contractor shall designate a responsible member of his organization on the work, whose duty shall be the prevention of accidents. The name and position of any person so designated shall be reported to the architect by the contractor.

The contractor shall return to conditions existing prior to the start of work on the project, all aspects of the site that have not been altered, removed, or otherwise changed permanently by the work. The contractor shall protect all existing buildings, structures, or other features from damage by any operation in connection with the project. Utilities encountered shall be protected and maintained in service until removed or abandoned. The contractor shall exercise care when working around such utilities as may be shown on the plot plan or otherwise found. Such utilities are not to be removed, replaced or abandoned.

The contractor shall protect existing trees, and other aspects of the site which will remain a permanent part of the site from damage during grading, excavation, filling, trucking, etc. If

necessary, tree trunks shall be boxed, and barricades set up at sufficient distance to prevent damage to major tree branches.

Should the work or material of this or any other contractor employed by the owner become damaged when reasonably protected, the same shall be replaced by the contractor causing the damage at no expense to the owner.

In an emergency potentially affecting health or life or of serious damage to property or of adjoining property, the contractor, without special instruction or authorization from the architect or owner, is hereby permitted to act on his own discretion, to prevent such threatened loss or injury, and the contractor shall so act, without appeal, if so authorized or instructed. Any compensation claimed by the contractor on account of emergency work, shall be determined by agreement.

ARTICLE 14: **INSPECTION OF WORK**

The architect and his representatives, the Bureau of General Services representatives and the owner, shall at all times have access to the work whenever it is in preparation or progress. The contractor shall provide proper facilities for such access and for inspection.

If the specifications, the architect's instructions, laws, ordinances or any public authority require any work to be specially tested or approved, the contractor shall give the architect timely notice of its readiness for observation by the architect or inspection by another authority, and if the inspection is by another authority than the architect, on the date fixed for such inspection, required certificates of inspection shall be secured by the contractor. Observations by the architect shall be promptly made, and where practicable, prior to work is covered or buried. If any work which will ultimately be covered is covered prior to approval or consent of the architect, it must, if requested by the architect, be uncovered for examination at the contractor's expense.

Reexamination of questioned work may be ordered by the architect, and, if so ordered, the work must be uncovered by the contractor. If such work be found in accordance with the contract documents, the owner shall pay the cost of the reexamination and replacement. If such work be found not in accordance with the contract documents, the contractor shall pay such cost, unless it be found that the defect in the work was caused by a contractor employed as provided in Article 32, and in that event the owner shall pay such cost.

The Bureau of General Services, through its representatives shall make periodic inspections of the work during the course of construction and make recommendations to the architect or engineer, when employed. The architect or engineer, shall provide adequate inspection of materials, equipment, methods, and changes in plans on all projects under his supervision.

ARTICLE 15: **SUPERINTENDENCE: SUPERVISION**

The contractor shall have, during the progress of all work, a competent superintendent and any necessary assistants. The superintendent shall not be changed except with the consent of the owner unless a superintendent proves to be unsatisfactory to the contractor and ceases to be in his employ. The superintendent shall represent the contractor and all directions given to the superintendent in the absence of the contractor shall be as binding as if given directly to the contractor. Important directions shall be confirmed in writing to the contractor. Other directions shall be confirmed on written request in each case. The architect shall not be responsible for the acts or omissions of the superintendent or his assistants.

The contractor shall give efficient supervision to the work using his best skill and attention. He shall carefully study and compare all drawings, specifications and other instructions and shall at once report to the architect any error, inconsistency or omission which he may discover, but he shall not be liable to the owner for any damage resulting from any errors or deficiencies in the contract documents or other instructions by the architect.

ARTICLE 16: **CHANGES IN THE WORK**

The owner reserves the right to increase or decrease any or all of the items of work indicated in the plans, proposal, and contract, or the elimination of any one or more of such items, without invalidating the contract. As the work progresses, the owner may make such alterations in the plans, in the character of the work, or in the specified coordination of two or more concurrent contracts, as may be considered necessary or desirable in order to complete the construction. Such changes shall in no way invalidate the contract. All such work shall be executed under the conditions of the original contract except that any claim for extension of the time caused thereby shall be adjusted at the time of the ordering such change.

In giving instructions, the architect shall have authority to make minor changes in the work, not involving extra cost, and not in consistent with the purposes of the building or project, but otherwise, except in an emergency endangering life or property, no extra work or change shall be made unless in pursuance of a duly signed change order.

Should the contractor encounter during the progress of the work, latent conditions at the site materially differing from those shown on the drawings or in the specifications, or unknown conditions of an unusual nature differing materially from those already encountered in such work, the attention of the architect shall be immediately called for such conditions before they are disturbed. The architect shall promptly investigate the conditions and if they do so materially differ, the contract shall, with the approval of the owner and the bureau be modified by a change order to provide for any increase or decrease in cost resulting from such conditions.

Should such alterations be productive of increased unit cost, or result in decreased unit cost to the contractor, a fair and equitable sum therefor shall be agreed upon in writing before such work is begun, and shall be added to or deducted from the contract amount, as the case may be, by means of a written change order. The change order shall state the nature of the change, the location, the itemized estimate of unit quantities, the basis for payment, and the reason for the change. Such change order to be on approved forms.

When the change order has been properly signed by all parties and encumbered, it shall become a part of the contract.

The value of any such extra work or change shall be determined in one or more of the following ways:

A. By estimate and acceptance in a lump sum.

B. By unit prices named in the contract or subsequently agreed upon.

C. By cost and percentage or by cost and a fixed fee.

If none of the above methods is agreed upon, the contractor, provided he receives an order as above, shall proceed with the work.

Under case (C), the contractor shall keep and present in such form as the architect may direct, a correct account of the cost, together with vouchers. In any case, the architect shall certify to the amount, including reasonable allowance for overhead and profit, due to the contractor. Pending final determination of value, payments on account of changes shall be made on the architect's certificate.

When the subparagraphs (A) and (C) above are used to determine the value of the work, the allowance for overhead and profit combined, included in the total expense to the owner, shall be based upon the following schedule:

Contractor - for any work performed by the contractor's own forces, 20% of the cost;

Subcontractor - for work performed by subcontractor's own forces, 20% of the cost;

Contractor - for work performed by contractor's subcontractor, 10% of the amount due the subcontractor.

Cost shall be limited to the following: Cost of materials, cost of delivery, cost of labor, including Social Security, old age and unemployment insurance (labor cost may include a pro-ratio share of foremen's time, only in case an extension of contract time is granted on account of the change); workmen's compensation insurance; rental value of power tools and equipment.

Overhead shall include the following: bond premium, supervision, wages of time keepers, watchmen and clerks, small tools, incidental, general office expense, and all other expenses not included in "cost".

If the net value of a change results in a credit from the contractor or subcontractor, the credit given shall be the net cost without overhead or profit. The cost as used herein shall include all items of labor, materials and equipment.

ARTICLE 17: **CLAIMS FOR EXTRA COST**

If the contractor claims that any instructions by drawings or otherwise involve extra cost under this contract, the contractor shall give the architect written notice thereof within 10 days after the receipt of such instructions, and in any event before proceeding to execute the work, except in emergency endangering life or property, and the procedure shall then be as provided for changes in work. No such claim shall be valid unless so made.

ARTICLE 18: **DEDUCTIONS FOR UNCORRECTED WORK**

If the architect and owner deem it inexpedient to correct work injured or done not in accordance with the contract, an equitable deduction from the contract amount shall be made therefor.

ARTICLE 19: **DELAYS AND EXTENSION OF TIME**

If the contractor is delayed at any time in the progress of the work by an act or neglect of the owner or the architect, or of any employee of either, or by any separate contractor employed by the owner, or by changes ordered in the work or by strikes, lockouts, fire, unusual delay in transportation, unavoidable casualties or by causes beyond the contractor's control, or by any cause which the architect shall decide to justify the delay, then the time of completion shall be extended for such reasonable time as the architect may decide.

No such extension shall be made for delay occurring more than seven days before claim therefor is made in writing to the architect. In case of a continuing cause of delay, only one claim is necessary.

If no schedule or agreement stating the dates upon which drawings shall be furnished is made, then no claim for delay shall be allowed on account of failure to furnish drawings until two weeks after demand for such drawings and not then unless such claim be reasonable.

This article does not exclude the recovery of damages for delay by either party under other provisions in the contract document.

ARTICLE 20: **CORRECTION OF WORK**

The contractor shall promptly remove from the premises all work condemned by the architect as failing to conform to the contract, whether incorporated or not, and the contractor shall promptly replace and redo the work in accordance with the contract and without expense to the owner and shall bear the expense of making good all work of other contractors destroyed or damaged by such removal or replacement.

If the contractor does not remove such condemned work within a reasonable time, fixed by written notice, the owner may remove it and may store the material at the expense of the contractor. If the contractor does not pay the expenses of such removal within ten days time, thereafter, the owner may, upon ten days written notice, sell such materials at auction or at private sale and shall account for the net proceeds thereof, after deducting all the costs and expenses that should have been borne by the contractor.

The contractor shall remedy any defects due to faulty materials or workmanship and pay for any damage to other work resulting therefrom, which shall appear within a period of one year from the date of final payment, or from the date of the owner's substantial usage or occupancy of the project, whichever is earlier, and in accordance with the terms of any special guarantees provided in the contract. The owner shall give notice of observed defects with reasonable promptness. All questions arising under this article will be decided by the architect, notwithstanding final payment.

ARTICLE 21: **OWNERS RIGHT TO DO WORK**

If the contractor should neglect to prosecute the work properly or fail to perform any provisions of this contract, the owner, after three days written notice to the contractor may, without prejudice to any other remedy may make good such deficiencies and may deduct the cost thereof from the payment; then or thereafter due the contractor, provided, however, that the architect shall approve both such action and the amount charged to the contractor.

ARTICLE 22: **OWNERS RIGHT TO TERMINATE CONTRACT**

If the contractor should be adjudged bankrupt, or if the contractor should make a general assignment for the benefit of its creditors, or if a receiver should be appointed on account the contractor's insolvency, or if the contractor should persistently or repeatedly refuse or should fail, except in cases for which extension of time is provided, to supply enough properly skilled workers or proper materials or if the contractor should fail to make prompt payment to subcontractors or for material, or labor, or persistently disregard laws, ordinance or the instructions of the architect, or otherwise be guilty of a substantial violation of any provision of the contract, then the owner, upon the certificate of the architect that sufficient cause exists to justify such action, may without prejudice to any other right or remedy and after giving the contractor and the contractor's surety seven days written notice, terminate the employment of the contractor and take possession of the premises and of all materials, tools and appliances thereon and finish the work by whatever method the owner may deem expedient. In such case the contractor shall not be entitled to receive any further payment until the work is finished. If the unpaid balance of the contract amount shall exceed the expense of finishing the work including compensation for additional architectural, managerial and administrative services, such excess shall be paid to the contractor. If such expense shall exceed such unpaid balance, the contractor shall pay the difference to the owner. The expense incurred through the contractor's default, shall be certified by the architect.

ARTICLE 23: **THE CONTRACTOR'S RIGHT TO STOP WORK OR TERMINATE CONTRACT**

If the work should be stopped under an order of any court, or other public authority, for a period of thirty days, through no act or fault of the contractor or of anyone employed by the contractor, then the contractor, may, upon seven days written notice to the owner and the architect, terminate this contract and recover from the owner, payment for all work executed and any proven loss sustained upon any plant or materials and reasonable profit and damage.

Should the architect fail to issue any certificate for payment, through no fault of the contractor, within seven days after the contractor's formal request for payment or if the owner should fail to pay to the contractor within 30 days after presentation, any sum certified by the architect, then the contractor may, upon seven days written notice to the owner and the architect, stop the work or terminate this contractor as set out in the preceding paragraph.

ARTICLE 24: **PAYMENTS**

The contractor shall, before the first application for payment, submit to the architect in triplicate a "contract cost breakdown" form acceptable to the architect. If required, this form shall be supported by such evidence as to its correctness as the architect may direct and, unless found to be in error, shall be approved by the architect and used as a basis for payments.

The contractor shall submit to the architect an application for each payment on the latest revision of "Requisition for payment" form, B.P.I. 17-A-61, and, if required, receipts or other vouchers, showing his payments of materials and labor, including payments to subcontractors as required by Article 34.

Application for payment as the work progresses may be made of the owner but no more often than once a month, unless due to unusual circumstance the owner may approve more frequent payment. Said requisition for payments shall be based on the proportionate quantities of the various classes of work completed or incorporated in the work, in accordance with the work progress schedule and the value thereof determined from the contract cost breakdown. Payments, upon authorization of the architect, may be made on account of materials not incorporated in the work but delivered and suitably stored at the site. Such payments shall be conditioned upon submission by the contractor of bills of sale, or such other procedure as will adequately protect the owner's interest including applicable insurance.

In the event any materials are delivered but not yet incorporated in the work, have been included in any said "Requisition for Payment" and payment thereon made and said materials thereafter deteriorate, become damaged or destroyed or for any reason whatsoever become unsuitable or unavailable for use in the work, then the full amount allowed therefore in any previous "Requisition for Payment", shall be deducted from the gross value of any subsequent payment or final payment unless the contractor shall satisfactorily replace said material.

After said "Requisition for Payment" has been prepared by the contractor in the required number of copies, it shall be submitted to the architect for approval. The architect shall verify and approve the "Requisition for Payment", and forward all copies to the owner for processing for payment by the owner.

No certificate issued nor payment made to the contractor, nor partial or entire use of occupancy of the work by the owner, shall be an acceptance of any work or materials not in accordance with this contract. The making and acceptance of the final payment shall constitute a waiver of all claims by the owner, other than those arising from unsettled liens, from faulty work or materials appearing within one year from final payment or from requirement of drawings, or specifications, and of all claims by the contractor, except those previously made and still unsettled.

Title 5 M.R.S.A. § 1746 as amended provides that in any contract awarded for any public improvement, the State shall withhold 5% of the money due the contractor until the project under the contract has been accepted by or for the State, except that when the contract has been substantially completed the State may, upon request, further reduce the amounts withheld if it deems it desirable and prudent, or except when the contractor elects to deposit with the Treasurer of the State certain Government Bonds as provided in Chapter 437, Public Laws of 1967.

ARTICLE 25. PAYMENTS WITHHELD

The architect may withhold or, on account of subsequently discovered evidence, nullify the whole or a part of any certificate to such extent as may be necessary in his reasonable opinion to protect the owner from loss on account of:

A. Defective work not remedied.
B. Claims filed or reasonable evidence indicating probably filing of claims.
C. Failure of the contractor to make payments properly to subcontractors for materials or labor.
D. A reasonable doubt that the contract can be completed for the balance then unpaid.
E. Damage to another contractor.

When the above grounds are removed, payments shall be made for amounts withheld because of them.

ARTICLE 26 CONTRACTOR'S INSURANCE REQUIREMENTS

The Contractor shall not commence work under this contract until the Contractor has obtained all insurance required under this article and such insurance has been approved by the Owner, nor shall the Contractor allow any Subcontractor to commence work on a subcontract until all similar insurance required of the Subcontractor has been so obtained and approved.

The Owner does not warrant or represent that the insurance required under this paragraph constitutes an insurance portfolio which adequately addresses all risks faced by the Contractor or

its Subcontractors. The Contractor and Subcontractors of every tier shall satisfy themselves as to the existence, extent and adequacy of insurance prior to commencement of work.

The Contractor and any Subcontractor shall procure and maintain for the duration of the Project insurance of the types and limits set forth under this paragraph and such insurance as will protect themselves from claims which may arise out of or result from the Contractor's or Subcontractor's execution of the work, whether such execution be by themselves or by anyone directly or indirectly employed by any of them or by anyone for whose acts any of them may be liable. The insurance coverage provided by the Contractor and any Subcontractor will be primary coverage.

A. Workers' Compensation Insurance

Worker's compensation insurance for all employees on site in accordance with the statutory workers' compensation law of the State of Maine.

Minimum acceptable limits for Employer's Liability are:

Bodily Injury By Accident	$500,000
Bodily Injury by Disease	$500,000 Each Employee
Bodily Injury by Disease	$500,000 Policy Limit.

B. Liability Insurance

1. General Liability Insurance

General liability insurance shall be on a form providing coverage not less than that of the 1996 occurrence version of the Insurance Services Office (ISO) Commercial General Liability Policy. This insurance shall cover bodily injury and property damage liability for all hazards of the Project including premise and operations, products and completed operations, contractual, and personal injury liabilities. It shall include collapse and underground coverage - as well as explosion coverage if explosion hazards exist. Aggregate limits shall apply on a per location or project basis.

Minimum acceptable limits are:

General aggregate limit:	$2,000,000
Products and completed operations aggregate:	$1,000,000
Each occurrence limit:	$1,000,000
Personal injury aggregate:	$1,000,000

2. Automobile Liability Insurance

Automobile liability insurance against claims for bodily injury, death or property damage resulting from the maintenance, ownership or use of all owned, nonowned and hired automobiles, trucks and trailers.

Minimum acceptable limit is $1,000,000 any one accident or loss.

3. Owners Protective Liability

For Contracts exceeding $50,000 in total Contract amount, Contractor shall secure an Owners Protective Liability policy naming the Owner as the Named Insured.

Minimum acceptable limits are:

General aggregate limit:	$2,000,000
Each occurrence limit:	$1,000,000

4. Pollution Liability

In the event that any disruption, handling, abatement, remediation, encapsulation, removal, transport, or disposal of contaminated or hazardous material is required, the Contractor or its Subcontractor shall secure a pollution liability policy in addition to any other coverages contained in this section. The insurance shall be provided on an occurrence based policy and shall remain in effect for the duration of the Project.

Minimum acceptable limit is $1,000,000 per occurrence.

C. Property Insurance

1. New Construction

The Contractor shall procure and maintain Builder's Risk insurance naming the Owner, Contractor and any Subcontractor as insureds as their interest may appear. Covered causes of loss form shall be all Risks of Direct Physical Loss, endorsed to include flood, earthquake, transit and sprinkler leakage where sprinkler coverage is applicable. Unless specifically authorized in writing by the Owner, the limit of insurance shall not be less than the initial contract amount and coverage shall apply during the entire contract period and until the work is accepted by the Owner.

2. Renovations and/or Additions within Existing State Owned Buildings

Insurance shall be provided by the Owner. The State shall notify Maine Risk Management Division concerning the Project and shall provide the value of the Project and the name of the Contractor. Said insurance coverage shall cover the interests of the Contractor and Subcontractor, as their interests may appear. Covered causes of loss form shall be Risks of Direct Physical Loss, endorsed to include flood, earthquake, transit and sprinkler leakage. Theft coverage is not included. Exclusions common to commercial property policies are applicable. The $500 per occurrence deductible is the responsibility of the Contractor. Should the Contractor or Subcontractor desire coverage in excess of that maintained by the State, it must be acquired by the Contractor and at Contractor expense. A certificate of insurance will be furnished to the Contractor upon request.

D. Certificates of Insurance

Four original copies of all certificates of insurance in a form and issued by companies acceptable to the Owner shall be provided to the architect prior to commencement of work. The certificates shall name as certificate holder the State of Maine, Bureau of General Services, 77 State House Station, Augusta, Maine 04333-0077 and shall contain a provision that coverage afforded under the insurance policies will not be canceled or materially changed unless at least thirty (30) days prior written notice by registered letter has been given to the Owner.

ARTICLE 27: **CONTRACT BONDS**

The contractor shall furnish to the state upon execution of the contract, a contract performance bond and a contract payment bond; each for the full amount of the contract and issued by a surety company or surety companies authorized to do business in the State of Maine as approved by the owner. The bonds shall be in accordance with and executed on the forms furnished in the specifications. The bonds shall allow for any addition or deductions of the contract.

The contract bonds shall continue in effect for one year after final acceptance of each contract to protect the owner's interest in connection with the one year guarantee of workmanship and materials and to assure settlement of claims, for the payment of all bills for labor, materials and equipment by the contractor.

ARTICLE 28: **DAMAGES**

1. The contractor shall indemnify and hold harmless the owner and the architect and their agents and employees from and against all claims, damages, losses, and expenses including attorneys' fees arising out of or resulting from the performance of the work, provided that any such claim, damage, loss, or expense (a) is attributable to bodily injury, sickness, disease or death, or injury to or destruction to tangible property (other than the work itself) including the loss of use resulting therefrom, and (b) is caused in whole or in part by a negligent act or omission of the contractor, any subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder.

2. In any and all claims against the owner or the architect or any of their agents or employees, by any employee of the contractor, any subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the indemnification obligation under paragraph 1 shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for the contractor or any subcontractor under Workmen's Compensation Acts, disability benefit acts or other employee benefit acts.

3. The obligations of the contractor under paragraph 1 shall not exceed to the liability of the architect, the architect's agents or employees arising out of:

(1) the preparation or approval of maps, drawings, opinions, reports, surveys, change orders, designs or specifications, or

(2) the giving of or the failure to give directions or instructions by the architect, the contractor, agents or employees provided such giving or failure to give is the primary cause of the injury or damage.

ARTICLE 29: **LIENS**

Neither the final payment nor any part of the retained percentage shall become due until the contractor shall deliver to the owner a complete release of all liens arising out of this contract, or receipts in full in lieu thereof, and, an affidavit that so far as the contractor has knowledge or information the releases and receipts include all the labor and material for which a lien could be filed; but the contractor, may if any subcontractor refuses to furnish a release or receipt in full, furnish a bond satisfactory to the owner, to indemnify him against any lien. If any lien remains unsatisfied after all the payments are made, the contractor shall refund to the owner all moneys that the latter may be compelled to pay in discharging such lien, including all cost and reasonable attorney's fee.

ARTICLE 30: **ASSIGNMENT**

Neither party to the contract shall assign the contractor or sublet it as a whole without the written consent of the other, nor shall the contractor assign any money due or to become due to him hereunder, without the previous written consent of the owner.

ARTICLE 31: **MUTUAL RESPONSIBILITY OF CONTRACTORS**

Should the contractor cause damage to any separate contractor on the work, the contractor agrees, upon due notice, to settle with such contractor by agreement or arbitration, if he will so settle. If such separate contractor sues the owner on account of any damage alleged to have been so sustained, the owner shall notify the contractor, who shall defend such proceedings at the contractors expense and if any judgment against the owner arise therefrom, the contractor shall pay or satisfy it and pay all costs incurred by the owner.

ARTICLE 32: **SEPARATE CONTRACTS**

The owner reserves the right to let other contracts in connection with this work under similar general conditions. The contractor shall afford other contractors reasonable opportunity for the introduction and storage of their materials and the execution of their work, and shall properly connect and coordinate his work with theirs.

If any part of the contractor's work depends on proper execution or results upon the work of any other contractor, the contractor shall inspect and promptly report to the architect any defects in such work that render it unsuitable for such proper execution and results. The contractor's failure so to inspect and report shall constitute an acceptance of the other contractor's work as fit and proper for the reception of his work, except as to defects which may develop in contractor's work after the execution of the contractor's work.

To insure the proper execution of the contractor's subsequent work the contractor shall measure work already in place and shall at once report to the architect any discrepancy between the executed work and the drawings.

ARTICLE 33: **SUBCONTRACTS**

The Contractor shall not sublet any part of this contract without the written permission of the owner.

The contractor shall submit in writing to the architect for approval a complete list of the names of all particular items of work he proposes to furnish and the names of the subcontractors to whom the contractor proposes to sublet work. The subcontractors named shall be reputable firms of recognized standings with a record of satisfactory work. The contractor shall not employ any subcontractor or use any material until they have been approved, or where there is reason to believe the work will not be accomplished in accordance with the contract documents. The complete list of subcontractors and materials must be submitted for approval to the architect and owner.

The architect shall, on request, furnish to any subcontractor, wherever practicable, evidence of the amounts certified on his account.

The contractor agrees that he is as fully responsible to the owner for the acts and omissions of his subcontractor and of persons either directly or indirectly employed by them, as he is for the acts and omissions of persons directly employed by them, as he is for the acts and omissions of persons directly employed by him.

Nothing contained in the contract documents shall create any contractual relation between any subcontractor and the owner.

ARTICLE 34: **RELATIONS OF CONTRACTOR AND SUBCONTRACTOR**

The contractor agrees to bind every subcontractor and every subcontractor agrees to be bound by the terms of the contract documents, the drawings and specifications as far as they are applicable to his work, including the following provisions of this article, unless specifically noted to the contrary in a subcontract approved in writing as adequate by the owner or architect.

The Subcontractor agrees:

A. To be bound to the contractor by the terms of the contract documents, drawings, and specifications and to assume toward the contractor all the obligations and responsibilities that the contractor, by those documents, assumes toward the owner.

B. To submit to the contractor applications for payment in such reasonable time as to enable the contractor to apply for payment as specified.

C. To make all claims for extras, for extensions of time and for damages for delays or otherwise, to the contractor in the manner provided in the general

conditions for like claims by the contractor upon the owner, except that the time for making claims for extra cost is one week.

The Contractor agrees:

D. To be bound to the subcontractor by all the obligations that the owner assumes to the contractor under the contract documents, drawings and specifications, and by all the provisions thereof affirming remedies and redress to the contractor from the owner.

E. To pay the subcontractor, upon the payment of certificates, the amount allowed to the contractor on account of the subcontractor's work to the extent of the subcontractor's interest therein.

F. To pay the subcontractor, upon the payment of certificates, if issued otherwise as in section E above, so that at all times the subcontractor's total payments shall be as large in proportion to the value of the work done by the subcontractor.

G. To pay the subcontractor to such extent as may be provided by the contract documents or the subcontract, if either of these provide for earlier or larger payments than the above.

H. To pay the subcontractor on demand for subcontract work or materials as far as executed and fixed in place, less the retained percentage, at the time the certificate should issue, even though the Architect fails to issue it for any cause not the fault of the subcontractor.

I. To make no demand for liquidated damages or penalty for delay in any sum in excess of such amounts as may be specifically named in the subcontract.

J. That no claim for services rendered or materials furnished by the contractor to the subcontractor shall be valid unless written notice thereof is given by the contractor to the subcontractor during the first ten days of the calendar month following that in which the claim originated.

K. To give the subcontractor an opportunity to present and to submit evidence in any progress conference or disputes involving subcontract work.

L. To pay the subcontractor a just share of any fire insurance money received by him, the contractor, under article 26 of the general conditions.

ARTICLE 35: **ARCHITECT'S STATUS**

The architect shall be the owner's representative during the construction period, and he shall observe the work in progress on behalf of the owner. He shall have authority to act on

behalf of the owner only to the extent expressly provided in the contract documents or otherwise in writing, which shall be shown to the contractor. He shall have authority to stop the work whenever such stoppage may be necessary in his reasonable opinion to insure the proper execution of the contract.

The architect shall be, in the first instance, the interpreter of the conditions of the contract and the judge of its performance. The architect shall side neither with the owner nor with the contractor, but shall use the architect's powers under the contract to enforce its faithful performance by both.

In case of the termination of the employment of the architect, the owner shall appoint a capable and reputable architect whose status under the contract shall be that of the former architect.

ARTICLE 36: CASH ALLOWANCES

The contractor shall include the contract sum and all allowances named in the contract documents and shall cause the work so covered to be done by such contractors and for such sums as the architect may direct, the contract amount being adjusted in conformity therewith. The contractor declares that the contract amount includes such sums for expenses and profit on account of cash allowances as he deems proper. No demand for expenses or profit other than those included in the contract shall be allowed. The contractor shall not be required to employ for any such work, persons against whom the contractor has a reasonable objection.

ARTICLE 37: USES OF PREMISES

The contractor shall confine his apparatus, the storage of materials and the operations of his workmen to limits indicated by law, ordinances, permits or directions of the architect and shall not unreasonably encumber the premises with his materials.

The contractor shall not load or permit any part of the structure to be loaded with a weight which will endanger its safety. The contractor shall enforce the architect's instructions regarding signs, advertisements, fires, and smoking.

If any part of the building is completed and ready for occupancy, the owner may, by written and mutual consent, without prejudice to any of the owner's rights or the rights of the contractor, Enter in and make use of such completed parts of the building. Such use or occupancy shall in no case be construed as an acceptance of any work or materials.

ARTICLE 38: CUTTING, PATCHING AND DIGGING

The contractor shall do all cutting, fitting or patching of his work that may be required to make its several parts come together properly and fit it to receive or be received by work of other contractors shown upon, or reasonable implied by, the drawings and specifications for the completed structure, and he shall make good after them as the architect may direct.

Any cost caused by defective or ill-timed work shall be borne by the party responsible therefore. The contractor shall not endanger any work by cutting, excavating or otherwise, and shall not cut or alter the work of any other contractor except with the consent of the architect. Cutting, drilling, or patching work of contractors other than the general contractor shall be done only with the permission and instruction of the general contractor and architect. Cutting of structural members must be approved by the architect. All cutting, patching, and digging of other constructors in or about the building shall be done under the supervision of the general contractor who shall be responsible to see that the work is neatly done, and in a manner that will not endanger the structure or harm the component parts, and that patching and back filling shall be done to restore the structure and surfaces to its original condition.

ARTICLE 39: **LAYOUT OF WORK**

The contractor shall be responsible for the correct staking out of the new work on the site, and shall employ a competent engineer/surveyor to locate the building on the site. He shall run the axis lines locating the work, establish correct datum points and check each line and point on the site to insure their correctness. All such lines and points shall be carefully preserved throughout the construction.

The contractor shall lay out all work from dimensions given on plans. The contractor shall take measurements and verify dimensions of existing or old work, if any, that affect his work or to which his work is to be fitted. The contractor alone shall be responsible for the correctness of all measurements and shall verify all grades, lines, levels, elevations and dimensions shown on the drawings and report any errors or inconsistencies to the architect prior to commencing work.

ARTICLE 40: **WORKMANSHIP**

All workmanship, materials, or equipment, either at the site or intended for it shall conform with all respects with the requirements of all the contract documents, and shall be strictly first class, workmanlike installation and the best obtainable from the crafts and trades. Incomplete or careless work will not be allowed. In all cases, the material, equipment, and work shall be equal to or better than the grades specified and the best of their kind that is obtainable for the purpose for which they are intended. The architect's decision on the quality of work shall be final.

All labor shall be performed by mechanics skilled in their respective trades. Prior to submitting a proposal, the contractor shall become familiar with the local labor conditions, skilled and unskilled.

If, in the opinion of the contractor, any work is indicated on the drawings or specified in such manner as would make it impossible to produce work of the highest quality, or should discrepancies appear between drawings, or drawings and specifications, the contractor shall refer the same in writing to the architect for interpretation before proceeding with the work.

If the contractor fails to make such reference, no excuse will be entertained thereafter for failure to carry out the work in the satisfactory manner.

The contractor shall guarantee the contractor's work against any defects in workmanship and materials for a period of one year from the date of the written acceptance of the project.

ARTICLE 41: **CLEANING UP**

The contractor shall at all times keep the premises free from accumulation of waste materials or rubbish caused by his employees or work, and at the completion of the work he shall remove all his rubbish from and about the building and all his tools, scaffolding, and surplus materials and shall leave his work "Broom Clean" or its equivalent, unless more exactly specified.

In case of failure to comply with the contractor, the owner may perform the cleanup and deduct the cost from any moneys due the contractor.

ARTICLE 42: **DISPUTE RESOLUTION**

If, in the performance of this contract, there arises a dispute between the contractor and the owner that cannot be resolved by the parties to the contract, the dispute shall be referred to the Director of the Bureau of General Services who, at his/her discretion, will submit the dispute to non-binding Alternate Dispute Resolution (ADR) or binding arbitration. If the parties in dispute are not satisfied with the results of ADR, the owner or the contractor may resubmit the dispute to the Director of the Bureau of General Services for binding arbitration.

State of Maine
Department of Labor
Bureau of Labor Standards
Technical Services Division
Augusta, Maine 04333-0045
Telephone (207) 623-7906

Wage Determination - In accordance with 26 MRSA §1301 et. seq., this is a determination by the Bureau of Labor Standards, of the fair minimum wage rate to be paid laborers and workers employed on the below titled project.

Title of Project —— Re-roof Buildings at Northern Maine Community College

Location of Project – Aroostook, Maine in Aroostook County

2008 Fair Minimum Wage Rates
Building 2 Aroostook County
(other than 1 or 2 family homes)

Occupation Title	Minimum Wage	Minimum Benefit	Total	Occupation Title	Minimum Wage	Minimum Benefit	Total
Asbestos Abatement Wrkr	$16.00	$1.48	$17.48	Ironworker - Reinforcing	$20.15	$15.45	$35.60
Assembler - Metal Bldg	$12.20	$2.18	$14.38	Ironworker - Structural	$20.15	$12.95	$33.10
Backhoe Loader Operator	$13.25	$1.72	$14.97	Laborers/Helper/Tender	$11.10	$0.42	$11.52
Boom Truck Operator	$27.22	$15.16	$42.38	Laborer - Skilled	$13.25	$1.21	$14.46
Bricklayer	$23.00	$2.28	$25.28	Loader Op - Front End	$15.00	$2.25	$17.25
Bulldozer Operator	$16.00	$2.76	$18.76	Mechanic - Maintenance	$21.24	$2.82	$24.06
Carpenter	$16.00	$1.87	$17.87	Mechanic - Refrigeration	$18.75	$2.79	$21.54
Carpenter - Acoustical	$13.30	$1.78	$15.08	Millwright	$22.00	$0.00	$22.00
Carpenter - Rough	$13.00	$0.92	$13.92	Oil/Fuel Burner Serv & Instr	$19.84	$4.04	$23.88
Cement Mason/Finisher	$16.00	$0.85	$16.85	Painter	$14.00	$0.67	$14.67
Commun Equip Installer	$23.00	$3.08	$26.08	Paperhanger	$13.25	$0.00	$13.25
Concrete Mixing Plant Op	$15.85	$5.98	$21.83	Paver - Bituminous	$15.50	$1.32	$16.82
Concrete Pump Operator	$19.00	$2.89	$21.89	Pile Driver Operator	$20.41	$4.24	$24.65
Crane Operator <15 Tons	$18.00	$2.02	$20.02	Pipe/Stm/Sprkler Fitter	$19.75	$4.95	$24.70
Crane Operator =>15 Tons	$22.00	$1.99	$23.99	Plumber (Licensed)	$20.00	$5.97	$25.97
Crusher Plant Operator	$14.06	$1.94	$16.00	Plumber Hlpr/Trainee (Lic)	$16.00	$4.86	$19.86
Driller - Well	$13.50	$0.99	$14.49	Pump Installer	$16.00	$1.62	$17.62
Dry-Wall Applicator	$18.00	$0.42	$18.42	Roller Operator - Earth	$13.25	$4.08	$17.33
Dry-Wall Taper & Finisher	$19.50	$0.00	$19.50	Roller Operator - Pavement	$15.75	$4.75	$20.50
Electrician	$20.00	$5.32	$25.32	Roofer	$12.55	$0.62	$13.17
Electrician Hlpr (Licensed)	$13.00	$2.62	$15.62	Sheet Metal Worker	$15.00	$0.95	$15.95
Elevator Constrctr/Installer	$44.20	$15.74	$59.94	Sider	$15.50	$0.23	$15.73
Excavator Operator	$15.00	$1.82	$16.82	Tile Setter	$20.00	$3.68	$23.68
Fence Setter	$12.00	$0.00	$12.00	Truck Driver - Light	$14.50	$1.77	$16.27
Floor Layer	$13.13	$0.40	$13.53	Truck Driver - Medium	$13.30	$3.99	$17.29
Glazier	$13.25	$3.04	$16.29	Truck Driver - Heavy	$11.00	$0.55	$11.55
Insulation Installer	$15.00	$1.50	$16.50	Truck Driver - Tractor Trailer	$14.00	$3.24	$17.24

The Laborer classifications include a wide range of work duties. Therefore, if any specific occupation to be employed on this project is not listed in this determination, call the Bureau of Labor Standards at the above number for further clarification.

Welders are classified in the trade to which the welding is incidental.

Apprentices - The minimum wage rate for registered apprentices are those set forth in the standards and policies of the Maine State Apprenticeship and Training Council for approved apprenticeship programs.

Posting of Schedule - Posting of this schedule is required in accordance with 26 MRSA §1301 et. seq., by any contractor holding a State contract for construction valued at $50,000 or more and any subcontractors to such a contractor.

Appeal - Any person affected by the determination of these rates may appeal to the Commissioner of Labor by filing a written notice with the Commissioner stating the specific grounds of the objection within ten (10) days from the filing of these rates with the Secretary of State.

Determination No: 82-045-2008

Filing Date: May 12, 2008

Expiration Date: 12-31-2008

A true copy
Attest:
William A. Peabody
Director
Bureau of Labor Standards

BLS 424BU (R2008) (Building 2 Aroostook)

DOCUMENT 00320 - INFORMATION AVAILABLE TO BIDDERS

The following information is provided for informational purposes only. It is not part of the Contract document.

The Contractor shall furnish labor, materials, equipment, supplies, and perform all operations necessary to complete the removal and proper disposal of asbestos containing roofing materials (ACM). Asbestos containing roofing has been identified present on the following structures:

Aroostook Hall - felt paper underlayment beneath non-ACM shingles
Reed Commons – flat built up roofing and silver roof patching
Washington Hall – asphalt shingles and felt paper underlayment

A copy of the Limited Asbestos Identification Surveys for Four Structures Located on the Campus of the Northern Maine Community College in Presque Isle, Maine prepared by Summit Environmental Consultants, Inc. dated May 16, 2008 is included in the Appendix of this project manual.

Competent persons trained, knowledgeable and qualified in the techniques of asbestos roof abatement, handling and disposal of ACM shall preform the work. Work shall be in accordance with all applicable federal, state, and local regulations. Applicable State regulations shall include, but not limited to, Maine Department of Environmental Protection Asbestos Management Regulations Chapter 425, sections 7. D. and 7.E.

END OF DOCUMENT 00320

DOCUMENT 000850 - INDEX OF DRAWINGS

ARCHITECTURAL DRAWINGS

GI001 SITE GENERAL NOTES & ABBREVIATIONS
GI002 SYMBOLS & ABBREVIATIONS
AE101 COMMONS ROOF PLAN
AE102 PENOBSCOT RESIDENCE HALL ROOF PLAN
AE103 AROOSTOOK RESIDENCE HALL ROOF PLAN
AE104 WASHINGTON RESIDENCE HALL ROOF PLAN
AE501 ROOF DETAILS COMMONS
AE502 ROOF DETAILS COMMONS & RESIDENCE HALLS
AE503 ROOF DETAILS TYPICAL

STRUCTURAL DRAWINGS

S101 COMMONS LOWER ROOF FRAMING PLAN
S102 STRUCTURAL DETAILS

SECTION 01100 - SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes the following:
1. Work covered by the Contract Documents.
2. Type of the Contract.
3. Use of premises.
4. Owner's occupancy requirements.
5. Work restrictions.
6. Specification formats and conventions.

B. Related Sections include the following:
1. Division 1 Section "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

1.3 WORK COVERED BY CONTRACT DOCUMENTS

A. Project Identification: NMCC Re-Roofing
1. Project Location: Northern Maine Community College, 33 Edgemont Drive, Presque Isle, ME 04769

B. Owner: Northern Maine Community College
1. Owner's Representative:
a. Barry Ingraham
33 Edgemont Drive
Presque Isle, ME 04769

C. Architect: WBRC Architects·Engineers, Inc.
1. Architect of Record:
a. Stephen E. Pedersen, AIA
44 Central St
Bangor, ME

D. The Work consists of the following:
1. The Work includes roof replacement at the Commons Building and the Penobscot, Aroostook, and Washington Residence Halls at Northern Maine Community of approximately 30,000 SF of existing built up roofing and asphalt shingles with new EPDM membrane and asphalt shingles, including miscellaneous roof repairs.
2. The work must be completed by August 22, 2008.

1.4 TYPE OF CONTRACT

A. Project will be constructed under a single prime contract.

1.5 USE OF PREMISES

A. General: Contractor shall have limited use of premises for construction operations as indicated on Drawings by the Contract limits.

B. Use of Site: Limit use of premises to areas within the Contract limits indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
   1. Limits: Confine constructions operations to Contract limits.
   2. Owner Occupancy: Allow for Owner occupancy of Project site and use by the public.
   3. Driveways and Entrances: Keep driveways loading areas, and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
      a. Schedule deliveries to minimize use of driveways and entrances.
      b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

C. Use of Existing Building: Maintain existing building in a weathertight condition throughout construction period. Repair damage caused by construction operations. Protect building and its occupants during construction period.

1.6 OWNER'S OCCUPANCY REQUIREMENTS

A. Full Owner Occupancy: Owner will occupy site and existing building during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day-to-day operations. Maintain existing exits, unless otherwise indicated.
   1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and authorities having jurisdiction.
   2. Provide not less than 72 hours' notice to Owner of activities that will affect Owner's operations.

1.7 WORK RESTRICTIONS

A. On-Site Work Hours: Work shall be generally performed inside the existing building during normal business working hours of 8 a.m. to 5 p.m., Monday through Friday, except otherwise indicated.
   1. Weekend Hours: No restrictions
   2. Early Morning Hours: Coordinate with Owner
   3. Hours for Utility Shutdowns: Coordinate with Owner and Utilities

1.8 SPECIFICATION FORMATS AND CONVENTIONS

A. Specification Format: The Specifications are organized into Divisions and Sections using the 16-division format and CSI/CSC's "MasterFormat" numbering system.
   1. Section Identification: The Specifications use Section numbers and titles to help cross-referencing in the Contract Documents. Sections in the Project Manual are in numeric sequence; however, the sequence is incomplete because all available Section numbers are not used. Consult the table of

contents at the beginning of the Project Manual to determine numbers and names of Sections in the Contract Documents.

2. Division 1: Sections in Division 1 govern the execution of the Work of all Sections in the Specifications.

B. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1. Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be inferred as the sense requires. Singular words shall be interpreted as plural, and plural words shall be interpreted as singular where applicable as the context of the Contract Documents indicates.

2. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by Contractor. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by Contractor or by others when so noted.

a. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.

1.9 MISCELLANEOUS PROVISIONS

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01100

SECTION 01210 - ALLOWANCES

PART 1 - GENERAL

1.1 SUMMARY

A. Types of allowances include the following:
   1. Lump-sum allowances.

B. Related Sections include the following:
   1. Division 1 Section "Contract Modification Procedures" for procedures for submitting and handling Change Orders.
   2. Division 1 Section "Quality Requirements" for procedures governing the use of allowances for testing and inspecting.

1.2 ADMINISTRATIVE REQUIREMENTS

A. Selected materials and equipment are specified in the Contract Documents by allowances. In some cases, these allowances include installation. Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when additional information is available for evaluation. If necessary, additional requirements will be issued by Change order.

B. Include all allowances in the Contract Sum.

C. Include overhead and profit expenses in the Contract Sum.

D. Each allowance includes:
   1. The cost of the product to the Contractor or Subcontractor, less any applicable trade discounts.
   2. Delivered to the site.
   3. Applicable taxes.
   4. Handling at the site; including unloading, uncrating, and storage.
   5. Protection from the elements and from damage.
   6. Labor for installation and finishing.
   7. Other expenses required to complete the installation.

1.3 SELECTION AND PURCHASE

A. At the earliest practical date after award of the Contract, advise Architect of the date when final selection and purchase of each product or system described by an allowance must be completed to avoid delaying the Work.

B. At Architect's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.

C. Purchase products and systems selected by Architect from the designated supplier.

1.4 SUBMITTALS

A. Submit proposals for purchase of products or systems included in allowances, in the form specified for Change Orders.

B. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.

1.5 UNUSED MATERIALS

A. Return unused materials purchased under an allowance to manufacturer or supplier for credit to Owner, after installation has been completed and accepted.
   1. If requested by Architect, prepare unused material for storage by Owner when it is not economically practical to return the material for credit. If directed by Architect, deliver unused material to Owner's storage space. Otherwise, disposal of unused material is Contractor's responsibility.

B. Should the net amounts be more or less than the specified amount of the allowance, the Contract Sum will be adjusted accordingly by Change Order.

C. Submit any claims for anticipated additional costs at the site, or other expenses caused by the selection under the allowance, prior to execution of the work.
   1. Submit documentation for actual additional costs at the site, or other expenses caused by the selection under the allowance, within 21 days after completion of execution of the work.

D. Failure to submit claims within the designated time will constitute a waiver of claims for additional costs.

E. At Contract closeout, reflect all approved changes in contract amounts in the final statement of accounting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

3.2 PREPARATION

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

B. All allowances will be carried by the General Contractor as indicated on the form 2-B1.

3.3 SCHEDULE OF ALLOWANCES

A. Allowance No. 1: Include $10,000 for Cutting and Patching of Existing Construction.
   1. Costs for cutting and patching not identified in the project plans.

END OF SECTION 01210

SECTION 01230 - ALTERNATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

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

1.3 DEFINITIONS

A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the Bidding Requirements that may be added to or deducted from the Base Bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.
   1. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

1.4 PROCEDURES

A. Coordination: Modify or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.
   1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.

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

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

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

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

A. Bid Alternate #1 (Add): Flat roof area at south side of Reed Commons (See Sheet AE101): Provide structural upgrades only as shown on Sheets S101 and S102 of the drawings. Re-roofing work is not required in this area.

B. Bid Alternate #2 (Add): Penobscot, Aroostook, and Washington Residence Halls: Perform structural upgrades only to existing wood roof trusses at shown on Detail E1, Sheet S102 of the drawings. Base bid shall exclude all work in these buildings.

C. Bid Alternate #3 (Add): Penobscot Residence Hall: Remove existing roof and provide new roofing as shown on the drawings. Base bid shall exclude re-roofing work on this building.

D. Bid Alternate #4 (Add): Aroostook Residence Hall: Remove existing roof and provide new roofing as shown on the drawings. Base bid shall exclude re-roofing work on this building.

E. Bid Alternate #5 (Add): Washington Residence Hall: Remove existing roof and provide new roofing as shown on the drawings. Base bid shall exclude re-roofing work on this building.

END OF SECTION 01230

SECTION 01250 - CONTRACT MODIFICATION PROCEDURES

-PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

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

B. Related Sections include the following:
1. Division 1 Section "Allowances" for procedural requirements for handling and processing allowances.
2. Division 1 Section "Unit Prices" for administrative requirements for using unit prices.
3. Division 1 Section "Product Requirements" for administrative procedures for handling requests for substitutions made after Contract award..

1.3 INFORMATION BULLETINS

A. Owner-Initiated Information Bulletins: Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications. Items that do not involve changes in the Contract Sum or Time will be marked "No cost or additional time for this change."
1. Information Bulletins issued by Architect are for information only. Do not consider them instructions either to stop work in progress or to execute the proposed change.
2. Within 10 days after receipt of Information Bulletin, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
   a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
   b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
   c. Include costs of labor and supervision directly attributable to the change.
   d. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

B. Contractor-Initiated Information Bulletins: If latent or unforeseen conditions require modifications to the Contract, Contractor may propose changes by submitting a request for a change to Architect.
1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.

4. Include costs of labor and supervision directly attributable to the change.
5. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
6. Comply with requirements in Division 1 Section "Product Requirements" if the proposed change requires substitution of one product or system for product or system specified.

C. Form: Use Information Bulletin Form provided by Architect. Sample copies are included at end of this Section.

1.4 ALLOWANCES

A. Allowance Adjustment: To adjust allowance amounts, base each Change Order proposal on the difference between purchase amount and the allowance, multiplied by final measurement of work-in-place. If applicable, include reasonable allowances for cutting losses, tolerances, mixing wastes, normal product imperfections, and similar margins.
1. Include installation costs in purchase amount only where indicated as part of the allowance.
2. If requested, prepare explanation and documentation to substantiate distribution of overhead costs and other margins claimed.
3. Submit substantiation of a change in scope of work, if any, claimed in Change Orders related to unit-cost allowances.
4. Owner reserves the right to establish the quantity of work-in-place by independent quantity survey, measure, or count.

B. Submit claims for increased costs because of a change in scope or nature of the allowance described in the Contract Documents, whether for the Purchase Order amount or Contractor's handling, labor, installation, overhead, and profit. Submit claims within 10 days of receipt of the Change Order or Construction Change Directive authorizing work to proceed. Owner will reject claims submitted later than 10 days after such authorization.
1. Do not include Contractor's or subcontractor's indirect expense in the Change Order cost amount unless it is clearly shown that the nature or extent of work has changed from what could have been foreseen from information in the Contract Documents.
2. No change to Contractor's indirect expense is permitted for selection of higher- or lower-priced materials or systems of the same scope and nature as originally indicated.

1.5 CHANGE ORDER PROCEDURES

A. On Owner's approval of a Proposal Request, Architect will issue a Change Order for signatures of Owner and Contractor on form included at end of Part 3.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01250

SECTION 01290 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

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

B. Related Sections include the following:
1. Division 1 Section "Allowances" for procedural requirements governing handling and processing of allowances.
2. Division 1 Section "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.
3. Division 1 Section "Unit Prices" for administrative requirements governing use of unit prices.
4. Division 1 Section "Construction Progress Documentation" for administrative requirements governing preparation and submittal of Contractor's Construction Schedule and Submittals Schedule.

1.3 DEFINITIONS

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

1.4 SCHEDULE OF VALUES

A. Coordination: Coordinate preparation of the Schedule of Values with preparation of Contractor's Construction Schedule.
1. Correlate line items in the Schedule of Values with other required administrative forms and schedules, including the following:
   a. Application for Payment forms with Continuation Sheets.
   b. Submittals Schedule.
   c. Contractor's Construction Schedule.
2. Submit the Schedule of Values to Architect at earliest possible date but no later than seven Insert number days before the date scheduled for submittal of initial Applications for Payment.
3. Subschedules: Where the Work is separated into phases requiring separately phased payments, provide subschedules showing values correlated with each phase of payment.

B. Format and Content: Use the Project Manual table of contents as a guide to establish line items for the Schedule of Values. Provide at least one line item for each Specification Section.
1. Identification: Include the following Project identification on the Schedule of Values:
   a. Project name and location.
   b. Name of Architect.
   c. Architect's project number.

d. Contractor's name and address.
e. Date of submittal.

2. Arrange the Schedule of Values in tabular form with separate columns to indicate the following for each item listed:
   a. Related Specification Section or Division.
   b. Description of the Work.
   c. Name of subcontractor.
   d. Name of manufacturer or fabricator.
   e. Name of supplier.
   f. Change Orders (numbers) that affect value.
   g. Dollar value.
      1) Percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.
3. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Provide several line items for principal subcontract amounts, where appropriate. Include separate line items under required principal subcontracts for operation and maintenance manuals, punch list activities, Project Record Documents, and demonstration and training in the amount of 5 percent of the Contract Sum.
4. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
5. Provide a separate line item in the Schedule of Values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
   a. Differentiate between items stored on-site and items stored off-site. If specified, include evidence of insurance or bonded warehousing.
6. Provide separate line items in the Schedule of Values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
7. Allowances: Provide a separate line item in the Schedule of Values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity. Use information indicated in the Contract Documents to determine quantities.
8. Each item in the Schedule of Values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
   a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the Schedule of Values or distributed as general overhead expense, at Contractor's option.
9. Schedule Updating: Update and resubmit the Schedule of Values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.5 APPLICATIONS FOR PAYMENT

A. Each Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.
   1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.

B. Payment Application Times: Progress payments shall be submitted to Architect by the first of the month. The period covered by each Application for Payment is one month, ending on the last day of the month.

C. Payment Application Forms: Use BGS Form 17A-61 as form for Applications for Payment.

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

1. Entries shall match data on the Schedule of Values and Contractor's Construction Schedule. Use updated schedules if revisions were made.
2. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.

E. Transmittal: Submit 6 signed and notarized original copies of each Application for Payment to Architect Construction Manager by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.
1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.

F. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's liens from subcontractors, sub-subcontractors, and suppliers for construction period covered by the previous application.
1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
2. When an application shows completion of an item, submit final or full waivers.
3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
4. Submit final Application for Payment with or preceded by final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.
5. Waiver Forms: Submit waivers of lien on forms, executed in a manner acceptable to Owner.

G. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
1. List of subcontractors.
2. Schedule of Values.
3. Contractor's Construction Schedule (preliminary if not final).
4. Products list.
5. Schedule of unit prices.
6. Submittals Schedule (preliminary if not final).
7. List of Contractor's staff assignments.
8. List of Contractor's principal consultants.
9. Copies of building permits.
10. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
11. Initial progress report.
12. Report of preconstruction conference.
13. Certificates of insurance and insurance policies.
14. Performance and payment bonds.
15. Data needed to acquire Owner's insurance.
16. Initial settlement survey and damage report if required.

H. Application for Payment at Substantial Completion: After issuing the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
2. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

I. Final Payment Application: Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
1. Evidence of completion of Project closeout requirements.
2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.

3. Updated final statement, accounting for final changes to the Contract Sum.
4. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
5. AIA Document G706A, "Contractor's Affidavit of Release of Liens."
6. AIA Document G707, "Consent of Surety to Final Payment."
7. Evidence that claims have been settled.
8. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.
9. Final, liquidated damages settlement statement.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01290

SECTION 01310 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
   1. Coordination Drawings.
   2. Administrative and supervisory personnel.
   3. Project meetings.

B. Each contractor shall participate in coordination requirements. Certain areas of responsibility will be assigned to a specific contractor.

C. Related Sections include the following:
   1. Division 1 Section "Construction Progress Documentation" for preparing and submitting Contractor's Construction Schedule.
   2. Division 1 Section "Execution Requirements" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
   3. Division 1 Section "Closeout Procedures" for coordinating Contract closeout.

1.3 COORDINATION

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

B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
   1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.

C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
   1. Preparation of Contractor's Construction Schedule.
   2. Preparation of the Schedule of Values.
   3. Installation and removal of temporary facilities and controls.
   4. Delivery and processing of submittals.
   5. Progress meetings.
   6. Preinstallation conferences.
   7. Project closeout activities.
   8. Startup and adjustment of systems.

9. Project closeout activities.

D. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.
1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. Refer to other Sections for disposition of salvaged materials that are designated as Owner's property.

1.4 SUBMITTALS

A. Coordination Drawings: Prepare Coordination Drawings if limited space availability necessitates maximum utilization of space for efficient installation of different components or if coordination is required for installation of products and materials fabricated by separate entities.
1. Content: Project-specific information, drawn accurately to scale. Do not base Coordination Drawings on reproductions of the Contract Documents or standard printed data. Include the following information, as applicable:
a. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
b. Indicate required installation sequences.
c. Indicate dimensions shown on the Contract Drawings and make specific note of dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to Architect for resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.
2. Sheet Size: At least 8-1/2 by 11 inches but no larger than 30 by 40 inches.
3. Number of Copies: Submit six opaque copies of each submittal. Architect will return four copies.
a. Submit six copies where Coordination Drawings are required for operation and maintenance manuals. Architect will retain two copies; remainder will be returned. Mark up and retain one returned copy as a Project Record Drawing.
4. Refer to individual Sections for Coordination Drawing requirements for Work in those Sections.

B. Key Personnel Names: Within 15 days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home and office telephone numbers. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.
1. Post copies of list in Project meeting room, in temporary field office, and by each temporary telephone. Keep list current at all times.

1.5 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

A. General: In addition to Project superintendent, provide other administrative and supervisory personnel as required for proper performance of the Work.
1. Include special personnel required for coordination of operations with other contractors.

1.6 PROJECT MEETINGS

A. General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated.
1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.

2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
3. Minutes: Record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within three days of the meeting.

B. Preconstruction Conference: Schedule a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than 15 days after execution of the Agreement. Hold the conference at Project site or another convenient location. Conduct the meeting to review responsibilities and personnel assignments.
1. Attendees: Authorized representatives of Owner, Construction Manager, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Agenda: Discuss items of significance that could affect progress, including the following:
   a. Tentative construction schedule.
   b. Phasing.
   c. Critical work sequencing and long-lead items.
   d. Designation of key personnel and their duties.
   e. Procedures for processing field decisions and Change Orders.
   f. Procedures for requests for interpretations (RFIs).
   g. Procedures for testing and inspecting.
   h. Procedures for processing Applications for Payment.
   i. Distribution of the Contract Documents.
   j. Submittal procedures.
   k. LEED requirements.
   l. Preparation of Record Documents.
   m. Use of the premises.
   n. Work restrictions.
   o. Owner's occupancy requirements.
   p. Responsibility for temporary facilities and controls.
   q. Construction waste management and recycling.
   r. Parking availability.
   s. Office, work, and storage areas.
   t. Equipment deliveries and priorities.
   u. First aid.
   v. Security.
   w. Progress cleaning.
   x. Working hours.
3. Minutes: Architect will record and distribute meeting minutes.

C. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity that requires coordination with other construction.
1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect of scheduled meeting dates.
2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
   a. The Contract Documents.
   b. Options.
   c. Related requests for interpretations (RFIs).
   d. Related Change Orders.
   e. Purchases.
   f. Deliveries.
   g. Submittals.
   h. Review of mockups.
   i. Possible conflicts.

j. Compatibility problems.
k. Time schedules.
l. Weather limitations.
m. Manufacturer's written recommendations.
n. Warranty requirements.
o. Compatibility of materials.
p. Acceptability of substrates.
q. Temporary facilities and controls.
r. Space and access limitations.
s. Regulations of authorities having jurisdiction.
t. Testing and inspecting requirements.
u. Installation procedures.
v. Coordination with other work.
w. Required performance results.
x. Protection of adjacent work.
y. Protection of construction and personnel.

3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present.
5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.

D. Progress Meetings: Conduct progress meetings at monthly intervals. Coordinate dates of meetings with preparation of payment requests.
1. Attendees: In addition to representatives of Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
1) Review schedule for next period.
b. Review present and future needs of each entity present, including the following:
1) Interface requirements.
2) Sequence of operations.
3) Status of submittals.
4) Deliveries.
5) Off-site fabrication.
6) Access.
7) Site utilization.
8) Temporary facilities and controls.
9) Work hours.
10) Hazards and risks.
11) Progress cleaning.
12) Quality and work standards.
13) Status of correction of deficient items.
14) Field observations.
15) Requests for interpretations (RFIs).

16) Status of proposal requests.
17) Pending changes.
18) Status of Change Orders.
19) Pending claims and disputes.
20) Documentation of information for payment requests.

3. Minutes: Architect will record and distribute to Contractor the meeting minutes.
4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present.
   a. Schedule Updating: Revise Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

E. Coordination Meetings: Conduct Project coordination meetings at weekly intervals. Project coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and preinstallation conferences.
1. Attendees: In addition to representatives of Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Agenda: Review and correct or approve minutes of the previous coordination meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
   a. Combined Contractor's Construction Schedule: Review progress since the last coordination meeting. Determine whether each contract is on time, ahead of schedule, or behind schedule, in relation to Combined Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
   b. Schedule Updating: Revise Combined Contractor's Construction Schedule after each coordination meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with report of each meeting.
   c. Review present and future needs of each contractor present, including the following:
      1) Interface requirements.
      2) Sequence of operations.
      3) Status of submittals.
      4) Deliveries.
      5) Off-site fabrication.
      6) Access.
      7) Site utilization.
      8) Temporary facilities and controls.
      9) Work hours.
      10) Hazards and risks.
      11) Progress cleaning.
      12) Quality and work standards.
      13) Change Orders.
3. Reporting: Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01310

SECTION 01320 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
   1. Preliminary Construction Schedule.
   2. Contractor's Construction Schedule.
   3. Submittals Schedule.
   4. Daily construction reports.
   5. Material location reports.
   6. Field condition reports.
   7. Special reports.

B. Related Sections include the following:
   1. Division 1 Section "Summary of Multiple Contracts" for preparing a combined Contractor's Construction Schedule.
   2. Division 1 Section "Payment Procedures" for submitting the Schedule of Values.
   3. Division 1 Section "Project Management and Coordination" for submitting and distributing meeting and conference minutes.
   4. Division 1 Section "Submittal Procedures" for submitting schedules and reports.
   5. Division 1 Section "Photographic Documentation" for submitting construction photographs.
   6. Division 1 Section "Quality Requirements" for submitting a schedule of tests and inspections.

1.3 DEFINITIONS

A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
   1. Critical activities are activities on the critical path. They must start and finish on the planned early start and finish times.
   2. Predecessor Activity: An activity that precedes another activity in the network.
   3. Successor Activity: An activity that follows another activity in the network.

B. Cost Loading: The allocation of the Schedule of Values for the completion of an activity as scheduled. The sum of costs for all activities must equal the total Contract Sum, unless otherwise approved by Architect.

C. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.

D. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.

E. Event: The starting or ending point of an activity.

F. Float: The measure of leeway in starting and completing an activity.
1. Float time belongs to Owner.
2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the successor activity.
3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.

G. Fragnet: A partial or fragmentary network that breaks down activities into smaller activities for greater detail.

H. Major Area: A story of construction, a separate building, or a similar significant construction element.

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

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

K. Resource Loading: The allocation of manpower and equipment necessary for the completion of an activity as scheduled.

1.4 SUBMITTALS

A. Qualification Data: For scheduling consultant.

B. Submittals Schedule: Submit three copies of schedule. Arrange the following information in a tabular format:
1. Scheduled date for first submittal.
2. Specification Section number and title.
3. Submittal category (action or informational).
4. Name of subcontractor.
5. Description of the Work covered.
6. Scheduled date for Architect's final release or approval.

C. Contractor's Construction Schedule: Submit two opaque copies of initial schedule, large enough to show entire schedule for entire construction period.
1. Submit an electronic copy of schedule, using software indicated, on CD-R, and labeled to comply with requirements for submittals. Include type of schedule (Initial or Updated) and date on label.

D. Daily Construction Reports: Submit two copies at weekly intervals.

E. Material Location Reports: Submit two copies at weekly intervals.

F. Field Condition Reports: Submit two copies at time of discovery of differing conditions.

G. Special Reports: Submit two copies at time of unusual event.

1.5 QUALITY ASSURANCE

A. Scheduling Consultant Qualifications: An experienced specialist in CPM scheduling and reporting, with capability of producing CPM reports and diagrams within 24 hours of Architect's request.

B. Prescheduling Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination." Review methods and procedures related to the Preliminary Construction Schedule and Contractor's Construction Schedule, including, but not limited to, the following:
1. Review software limitations and content and format for reports.
2. Verify availability of qualified personnel needed to develop and update schedule.
3. Discuss constraints, including phasing, work stages, area separations, interim milestones and partial Owner occupancy.
4. Review delivery dates for Owner-furnished products.
5. Review schedule for work of Owner's separate contracts.
6. Review time required for review of submittals and resubmittals.
7. Review requirements for tests and inspections by independent testing and inspecting agencies.
8. Review time required for completion and startup procedures.
9. Review and finalize list of construction activities to be included in schedule.
10. Review submittal requirements and procedures.
11. Review procedures for updating schedule.

1.6 COORDINATION

A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate contractors.

B. Coordinate Contractor's Construction Schedule with the Schedule of Values, list of subcontracts, Submittals Schedule, progress reports, payment requests, and other required schedules and reports.
1. Secure time commitments for performing critical elements of the Work from parties involved.
2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

PART 2 - PRODUCTS

2.1 SUBMITTALS SCHEDULE

A. Preparation: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, resubmittal, ordering, manufacturing, fabrication, and delivery when establishing dates.
1. Coordinate Submittals Schedule with list of subcontracts, the Schedule of Values, and Contractor's Construction Schedule.
2. Initial Submittal: Submit concurrently with preliminary bar-chart schedule. Include submittals required during the first 60 days of construction. List those required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
   a. At Contractor's option, show submittals on the Preliminary Construction Schedule, instead of tabulating them separately.
3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's Construction Schedule.

2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

A. Procedures: Comply with procedures contained in AGC's "Construction Planning & Scheduling."

B. Time Frame: Extend schedule from date established for the Notice to Proceed to date of Final Completion.
1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.

C. Activities: Treat each story or separate area as a separate numbered activity for each principal element of the Work. Comply with the following:
1. Activity Duration: Define activities so no activity is longer than 20 days, unless specifically allowed by Architect.
2. Procurement Activities: Include procurement process activities for the following long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
3. Submittal Review Time: Include review and resubmittal times indicated in Division 1 Section "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's Construction Schedule with Submittals Schedule.
4. Startup and Testing Time: Include not less than 14 days for startup and testing.
5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Architect's administrative procedures necessary for certification of Substantial Completion.

D. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.
1. Phasing: Arrange list of activities on schedule by phase.
2. Work under More Than One Contract: Include a separate activity for each contract.
3. Work by Owner: Include a separate activity for each portion of the Work performed by Owner.
4. Products Ordered in Advance: Include a separate activity for each product. Include delivery date indicated in Division 1 Section "Summary." Delivery dates indicated stipulate the earliest possible delivery date.
5. Owner-Furnished Products: Include a separate activity for each product. Include delivery date indicated in Division 1 Section "Summary." Delivery dates indicated stipulate the earliest possible delivery date.
6. Work Restrictions: Show the effect of the following items on the schedule:
   a. Coordination with existing construction.
   b. Limitations of continued occupancies.
   c. Uninterruptible services.
   d. Partial occupancy before Substantial Completion.
   e. Use of premises restrictions.
   f. Provisions for future construction.
   g. Seasonal variations.
   h. Environmental control.
7. Work Stages: Indicate important stages of construction for each major portion of the Work, including, but not limited to, the following:
   a. Subcontract awards.
   b. Submittals.
   c. Purchases.
   d. Mockups.
   e. Fabrication.
   f. Sample testing.
   g. Deliveries.
   h. Installation.
   i. Tests and inspections.

j. Adjusting.
k. Curing.
l. Startup and placement into final use and operation.

E. Cost Correlation: At the head of schedule, provide a cost correlation line, indicating planned and actual costs. On the line, show dollar volume of the Work performed as of dates used for preparation of payment requests.
1. Refer to Division 1 Section "Payment Procedures" for cost reporting and payment procedures.
2. Contractor shall assign cost to construction activities on the CPM schedule. Costs shall not be assigned to submittal activities unless specified otherwise but may, with Architect's approval, be assigned to fabrication and delivery activities. Costs shall be under required principal subcontracts for testing and commissioning activities, operation and maintenance manuals, punch list activities, Project Record Documents, and demonstration and training (if applicable), in the amount of 5 percent of the Contract Sum.
3. Each activity cost shall reflect an accurate value subject to approval by Architect.
4. Total cost assigned to activities shall equal the total Contract Sum.

F. Contract Modifications: For each proposed contract modification and concurrent with its submission, prepare a time-impact analysis using fragnets to demonstrate the effect of the proposed change on the overall project schedule.

2.3 REPORTS

A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:
1. List of subcontractors at Project site.
2. List of separate contractors at Project site.
3. Approximate count of personnel at Project site.
4. Equipment at Project site.
5. Material deliveries.
6. High and low temperatures and general weather conditions.
7. Accidents.
8. Meetings and significant decisions.
9. Unusual events (refer to special reports).
10. Stoppages, delays, shortages, and losses.
11. Meter readings and similar recordings.
12. Emergency procedures.
13. Orders and requests of authorities having jurisdiction.
14. Change Orders received and implemented.
15. Information Bulletins received and implemented.
16. Services connected and disconnected.
17. Equipment or system tests and startups.
18. Partial Completions and occupancies.
19. Substantial Completions authorized.

B. Material Location Reports: At weekly intervals, prepare and submit a comprehensive list of materials delivered to and stored at Project site. List shall be cumulative, showing materials previously reported plus items recently delivered. Include with list a statement of progress on and delivery dates for materials or items of equipment fabricated or stored away from Project site.

C. Field Condition Reports: Immediately on discovery of a difference between field conditions and the Contract Documents, prepare and submit a detailed report. Submit with a request for interpretation. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

2.4 SPECIAL REPORTS

A. General: Submit special reports directly to Owner within one day of an occurrence. Distribute copies of report to parties affected by the occurrence.

B. Reporting Unusual Events: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable.

PART 3 - EXECUTION

3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

A. Scheduling Consultant: Engage a consultant to provide planning, evaluation, and reporting using CPM scheduling.
1. In-House Option: Owner may waive the requirement to retain a consultant if Contractor employs skilled personnel with experience in CPM scheduling and reporting techniques. Submit qualifications.
2. Meetings: Scheduling consultant shall attend all meetings related to Project progress, alleged delays, and time impact.

B. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.
1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
3. As the Work progresses, indicate Actual Completion percentage for each activity.

C. Distribution: Distribute copies of approved schedule to Architect Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
1. Post copies in Project meeting rooms and temporary field offices.
2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

END OF SECTION 01320

SECTION 01330 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

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

B. Related Sections include the following:
1. Division 1 Section "Payment Procedures" for submitting Applications for Payment and the Schedule of Values.
2. Division 1 Section "Project Management and Coordination" for submitting and distributing meeting and conference minutes and for submitting Coordination Drawings.
3. Division 1 Section "Construction Progress Documentation" for submitting schedules and reports, including Contractor's Construction Schedule and the Submittals Schedule.
4. Division 1 Section "Quality Requirements" for submitting test and inspection reports and for mockup requirements.
5. Division 1 Section "Closeout Procedures" for submitting warranties.
6. Division 1 Section "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
7. Division 1 Section "Operation and Maintenance Data" for submitting operation and maintenance manuals.
8. Division 1 Section "Demonstration and Training" for submitting videotapes of demonstration of equipment and training of Owner's personnel.
9. Divisions 2 through 16 Sections for specific requirements for submittals in those Sections.

1.3 DEFINITIONS

A. Action Submittals: Written and graphic information that requires Architect's responsive action.

B. Informational Submittals: Written information that does not require Architect's responsive action. Submittals may be rejected for not complying with requirements.

1.4 SUBMITTAL PROCEDURES

A. General: Electronic copies of CAD Drawings of the Contract Drawings are available from the Architect for Contractor's use in preparing submittals.

B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.

2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
   a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

C. Submittals Schedule: Comply with requirements in Division 1 Section "Construction Progress Documentation" for list of submittals and time requirements for scheduled performance of related construction activities.

D. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
3. Resubmittal Review: Allow 15 days for review of each resubmittal.
4. Sequential Review: Where sequential review of submittals by Architect's consultants, Owner, or other parties is indicated, allow 21 days for initial review of each submittal.
   a. Structural Steel
   b. Fire Suppression piping
   c. Hydraulic Elevators

E. Identification: Place a permanent label or title block on each submittal for identification.
1. Indicate name of firm or entity that prepared each submittal on label or title block.
2. Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by Architect. Submittals without a Contractor's Review stamp will be returned immediately for Contractor's review.
3. Include the following information on label for processing and recording action taken:
   a. Project name.
   b. Date.
   c. Name and address of Architect.
   d. Name and address of Contractor.
   e. Name and address of subcontractor.
   f. Name and address of supplier.
   g. Name of manufacturer.
   h. Submittal number or other unique identifier, including revision identifier.
      1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 06100.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 06100.01.A).
   i. Number and title of appropriate Specification Section.
   j. Drawing number and detail references, as appropriate.
   k. Location(s) where product is to be installed, as appropriate.
   l. Other necessary identification.

F. Deviations: Highlight, encircle, or otherwise specifically identify deviations from the Contract Documents on submittals.

G. Additional Copies: Unless additional copies are required for final submittal, and unless Architect observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.
1. Submit one copy of submittal to concurrent reviewer in addition to specified number of copies to Architect.

2. Additional copies submitted for maintenance manuals will be marked with action taken and will be returned.

H. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect will return submittals, without review, received from sources other than Contractor.
1. Transmittal Form: Use sample form at end of Section.
2. Transmittal Form: Provide locations on form for the following information:
   a. Project name.
   b. Date.
   c. Destination (To:).
   d. Source (From:).
   e. Names of subcontractor, manufacturer, and supplier.
   f. Category and type of submittal.
   g. Submittal purpose and description.
   h. Specification Section number and title.
   i. Drawing number and detail references, as appropriate.
   j. Transmittal number, numbered consecutively.
   k. Submittal and transmittal distribution record.
   l. Remarks.
   m. Signature of transmitter.
3. On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same label information as related submittal.

I. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
1. Note date and content of previous submittal.
2. Note date and content of revision in label or title block and clearly indicate extent of revision.
3. Resubmit submittals until they are marked "Rejected." Or "Revise and Resubmit".

J. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

K. Use for Construction: Use only final submittals with mark indicating "Approved" or "Approved as noted" taken by Architect.

1.5 CONTRACTOR'S USE OF ARCHITECT'S CAD FILES

A. General: At Contractor's written request, copies of Architect's CAD files will be provided to Contractor for Contractor's use in connection with Project, subject to the following conditions:
1. A signed hold harmless agreement is required before the Architect will forward CAD files.

PART 2 - PRODUCTS

2.1 ACTION SUBMITTALS

A. General: Prepare and submit Action Submittals required by individual Specification Sections.
1. Submit electronic submittals directly to extranet specifically established for Project.

B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
   1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
   2. Mark each copy of each submittal to show which products and options are applicable.
   3. Include the following information, as applicable:
      a. Manufacturer's written recommendations.
      b. Manufacturer's product specifications.
      c. Manufacturer's installation instructions.
      d. Standard color charts.
      e. Manufacturer's catalog cuts.
      f. Wiring diagrams showing factory-installed wiring.
      g. Printed performance curves.
      h. Operational range diagrams.
      i. Mill reports.
      j. Standard product operation and maintenance manuals.
      k. Compliance with specified referenced standards.
      l. Testing by recognized testing agency.
      m. Application of testing agency labels and seals.
      n. Notation of coordination requirements.
   4. Submit Product Data before or concurrent with Samples.
   5. Number of Copies: Submit six copies of Product Data, unless otherwise indicated. Architect will return four copies. Mark up and retain one returned copy as a Project Record Document.

C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
   1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
      a. Dimensions.
      b. Identification of products.
      c. Fabrication and installation drawings.
      d. Roughing-in and setting diagrams.
      e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
      f. Shopwork manufacturing instructions.
      g. Templates and patterns.
      h. Schedules.
      i. Design calculations.
      j. Compliance with specified standards.
      k. Notation of coordination requirements.
      l. Notation of dimensions established by field measurement.
      m. Relationship to adjoining construction clearly indicated.
      n. Seal and signature of professional engineer if specified.
      o. Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring.
   2. 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 30 by 40 inches.
   3. Number of Copies: Submit two opaque (bond) copies of each submittal. Architect will return one copy.
   4. Number of Copies: Submit six opaque copies of each submittal, unless copies are required for operation and maintenance manuals. Submit six copies where copies are required for operation and maintenance manuals. Architect will retain two copies; remainder will be returned. Mark up and retain one returned copy as a Project Record Drawing.

D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.

1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
2. Identification: Attach label on unexposed side of Samples that includes the following:
   a. Generic description of Sample.
   b. Product name and name of manufacturer.
   c. Sample source.
   d. Number and title of appropriate Specification Section.
3. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
   a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
   b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
4. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
   a. Number of Samples: Submit two full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.
5. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
   a. Number of Samples: Submit three sets of Samples. Architect will retain two Sample sets; remainder will be returned. Mark up and retain one returned Sample set as a Project Record Sample.
      1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
      2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.

E. Product Schedule or List: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
   1. Type of product. Include unique identifier for each product.
   2. Number and name of room or space.
   3. Location within room or space.
   4. Number of Copies: Submit three copies of product schedule or list, unless otherwise indicated. Architect will return two copies.
      a. Mark up and retain one returned copy as a Project Record Document.

F. Contractor's Construction Schedule: Comply with requirements specified in Division 1 Section "Construction Progress Documentation" for Construction Manager's action.

G. Submittals Schedule: Comply with requirements specified in Division 1 Section "Construction Progress Documentation."

H. Application for Payment: Comply with requirements specified in Division 1 Section "Payment Procedures."

I. Schedule of Values: Comply with requirements specified in Division 1 Section "Payment Procedures."

J. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
1. Name, address, and telephone number of entity performing subcontract or supplying products.
2. Number and title of related Specification Section(s) covered by subcontract.
3. Drawing number and detail references, as appropriate, covered by subcontract.
4. Number of Copies: Submit three copies of subcontractor list, unless otherwise indicated. Architect will return two copies.
   a. Mark up and retain one returned copy as a Project Record Document.

2.2 INFORMATIONAL SUBMITTALS

A. General: Prepare and submit Informational Submittals required by other Specification Sections.
1. Number of Copies: Submit two copies of each submittal, unless otherwise indicated. Architect will not return copies.
2. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
3. Test and Inspection Reports: Comply with requirements specified in Division 1 Section "Quality Requirements."

B. Coordination Drawings: Comply with requirements specified in Division 1 Section "Project Management and Coordination."

C. Contractor's Construction Schedule: Comply with requirements specified in Division 1 Section "Construction Progress Documentation."

D. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

E. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) on AWS forms. Include names of firms and personnel certified.

F. Installer Certificates: Prepare written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.

G. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.

H. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.

I. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.

J. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.

K. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

L. Research/Evaluation Reports: Prepare written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
1. Name of evaluation organization.
2. Date of evaluation.
3. Time period when report is in effect.
4. Product and manufacturers' names.
5. Description of product.
6. Test procedures and results.
7. Limitations of use.

M. Schedule of Tests and Inspections: Comply with requirements specified in Division 1 Section "Quality Requirements."

N. Preconstruction Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.

O. Compatibility Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.

P. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.

Q. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment. Comply with requirements specified in Division 1 Section "Operation and Maintenance Data."

R. Design Data: Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

S. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer. Include the following, as applicable:
1. Preparation of substrates.
2. Required substrate tolerances.
3. Sequence of installation or erection.
4. Required installation tolerances.
5. Required adjustments.
6. Recommendations for cleaning and protection.

T. Manufacturer's Field Reports: Prepare written information documenting factory-authorized service representative's tests and inspections. Include the following, as applicable:
1. Name, address, and telephone number of factory-authorized service representative making report.

2. Statement on condition of substrates and their acceptability for installation of product.
3. Statement that products at Project site comply with requirements.
4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
6. Statement whether conditions, products, and installation will affect warranty.
7. Other required items indicated in individual Specification Sections.

U. Insurance Certificates and Bonds: Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.

V. Material Safety Data Sheets (MSDSs): Submit information directly to Owner; do not submit to Architect, except as required in "Action Submittals" Article.
1. Architect will not review submittals that include MSDSs and will return the entire submittal for resubmittal.

2.3 DELEGATED DESIGN

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.

B. Delegated-Design Submittal: In addition to Shop Drawings, Product Data, and other required submittals, submit three copies of a statement, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

A. Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.

B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ARCHITECT'S / ACTION

A. General: Architect will not review submittals that do not bear Contractor's approval stamp and will return them without action.

B. Action Submittals: Architect will review each submittal, make marks to indicate corrections or modifications required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:
   1. Reviewed, No Exception Taken
   2. Reviewed, Revise as Noted
   3. Revise and Resubmit
   4. Rejected

C. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.

D. Partial submittals are not acceptable, will be considered nonresponsive, and will be returned without review.

E. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

END OF SECTION 01330

SECTION 01331 - ADDITIONAL SUBMITTAL REQUIREMENTS

PART 1 - GENERAL

1.1 INSTRUCTIONS FOR GENERAL CONTRACTOR TRANSMITTAL LETTER (per sample attached)

A. Header information to be entered:
   1. Date
   2. GC's name/address/phone-fax
   3. WBRC A/E Project #/Comm. # and the WBRC A/E Project Name/Job Title
   4. Division # (*only one Division per transmittal, NO EXCEPTIONS)*
   5. GC's Transmittal # (see spec section 01330 for numbering details)
   6. Sub-contractor/Supplier name

B. Line item information
   1. 1 Specification Section per transmittal is preferred
   2. 8 items only per transmittal
   3. Using 1 line for each item being submitted, enter the following:
      a. # of copies
      b. Spec Section #;
      c. Part 1 Submittal Pgh.# (indicates what type of submittal it is)
      d. Part 2 Products Pgh.# (indicates description of the submittal item)
      e. Item Code Letter (sequential alphabet letters A,B,C, etc., one for each item)
      f. TYPE of submittal (prod data, sample, etc.)
      g. DESCRIPTION of item submitted (brick, siding, etc.)
         1) Information stapled together in one packet is a single item, and gets one Code Letter
         2) Leave the last column blank for the WBRC reviewer to complete

C. Specific Transmittal information
   1. Indicate the purpose of the transmittal, relevant comments, instructions, then sign the Transmittal Letter

1.2 INSTRUCTIONS FOR EACH SUBMITTAL ITEM (per sample attached)

A. Stamp the front/top page of EACH submittal item with the General Contractor's review stamp
   1. Make sure there is enough clear space on the top page for both the GC and the WBRC review stamps
      a. If there is not enough room, use a cover sheet attached to the front of each submittal item
      b. Samples also need to have a GC review stamp
      c. Do not fold back the top page; do not stamp over product information/drawing lines/etc.
      d. Complete all appropriate information, then sign the GC review stamp to show it has been reviewed

B. Write in the corresponding "Item Code Letter" from the transmittal letter
   1. Mark appropriate code letters (A,B,C,etc.) on each corresponding submittal item, including samples, near the GC review stamp

C. Use black or red marks (arrows, circles, bubbles) to indicate specific product information
   1. Do not use yellow highlighting that does not show up when photocopied

D. Bundle each set of submittal items together (all item "A" submittals bundled together, all item "B" submittals bundled together, etc.)

1.3 OTHER GENERAL INSTRUCTIONS

A. Comply with all other criteria listed in Section 01330 – Submittal Procedures.

PART 2 – PRODUCTS (not used)

PART 3 – EXECUTION (not used)

END OF SECTION 01331

Date: January 24, 2005

SUBMITTAL TRANSMITTAL LETTE

SAMPLE CONSTRUCTION COMPANY
Company Name
123 TEST STREET – ANYCITY MAINE 04000
Company Address
phone(000) 000-0000; fax(000) 000-0000
Telephone/Fax Number

TO: WBRC Architects·Engineers
44 Central Street
Bangor, ME 04401

RE: A/E Comm. #: 9999.00
Division #: 07
G.C. Transmittal #: 07-14

A/E Job Title: Sample Project

Sub-contractor/Supplier: ABC Product Company

WE ARE SENDING YOU THE ATTACHED ITEMS:

#Copies	Spec Section#	Part1 Pgh#	Part2 Pgh#	GC Code Letter*	Type of item / DESCRIPTION	*WBRC Review # ***
6	07210	1.2.A	2.2.D	A	Product data- fiberglass insulation	
6	07210	1.2.B.1	2.2.D	B	Certification for LEED, MR#4.1 for pre/post consumer content - fiberglass insulation	

THESE ARE TRANSMITTED as checked below:

X	For Review & Comment		For Your Use/File		As Requested		Resubmittal
	Other:						

COMMENTS:

Please note:
Manufacturer of previous submittal product data does not have LEED information available, so we are substituting this product as comparable.

COPY TO:

SIGNED: John Jones

* GC to also mark the appropriate code letter (A,B,C,etc.) on **each** corresponding submittal item next to your GC stamp.
** This column to be completed by the WBRC reviewer when returning to the GC using corresponding review number(s) :
1- Reviewed, No Exception Taken; 2- Reviewed, Revise as Noted; 3- Revise and Resubmit; 4- Rejected

Submittal Form

SHOP DRAWING REVIEW

REVIEWED	✓
MAKE CORRECTIONS NOTED	
AMEND & RESUBMIT	
REJECTED-SEE REMARKS	

A

1/23/05
DATE

☑ Reviewed, No Exception Taken ☐ Reviewed, Revise As Noted
☐ Revise and Resubmit ☐ Rejected

(Check mark designates action taken)
WBRC Architects Engineers
44 Central Street, Bangor, ME 04401

See Section on "Submittals" of the specifications, and limitations of this review, and responsibility of the contractor. In no case are quantities guaranteed. Review is not to be construed as permitting omission of the specified details necessary or specified but not specifically detailed or mentioned on the reviewed drawings

Date 2-5-05 By MEJ

Room for WBRC's review stamp

Corresponding item code letter written in

Room for GC's review stamp

CertainTeed

ber Glass Insulation Products

Submitted to: SAMPLE CONSTRUCTION COMPANY

Job Name: SAMPLE PROJECT

Submitted by: BUILDERS INSULATION

Date: mm/DD/YY

This Submittal Form is provided to assist you in specifying and selecting the proper CertainTeed Insulation product. Basic product descriptions and performance data are included. For further information or technical assistance, contact your local CertainTeed Sales Office.

CertainTeed Corporation
P.O. Box 860
Valley Forge, PA 19482

Product	Description	Thermal Resistance*/ Nominal Thickness	Applicable Standards
Unfaced Building Insulation	Manufactured in widths to permit pressure fit installation. Used with a separate vapor barrier or where no vapor barrier is required or recommended.	R-38 / 12" R-30 / 10" R-22 / 6½" R-19 / 6¼" R-13 / 3½" R-11 / 3½"	Complies with ASTM C 665 Type I (replaces Fed. Spec. HH-I-521F, cancelled 1984) Is noncombustible, meeting test criteria of ASTM E 136. Thermal performance determined by ASTM C 653 & C 518.
Kraft Faced Building Insulation	Manufactured with a flanged, kraft paper facing providing a vapor barrier with a perm rating of 1.0 or less.	R-38 / 12" R-30 / 10" R-22 / 6½" R-19 / 6¼" R-13 / 3½" R-11 / 3½"	Complies with ASTM C 665, Type II, Class C (replaces Fed. Spec. HH-I-521F, cancelled 1984) Thermal performance determined by ASTM C 653 & C 518.
Foil Faced Build Insul	Manufactured with a flanged foil vapor barrier providing a perm rating of 0.1 or less.	R-19 / 6¼" R-11 / 3½"	Complies with ASTM C 665 Type III, Class B (replaces Fed. Spec. HH-I-521F, cancelled 1984) Thermal performance determined by ASTM C 653 & C 518.
Flam Resis FSK Build Insul	Manufactured with a flame resistant foil facing. Used where a flame spread rating of 25 or less is required for insulation facings. The FSK Facing has a perm rating of 0.03 or less.	R-19 / 6¼" R-11 / 3½"	Complies with ASTM C 665 Type III, Class A (replaces Fed. Spec. HH-I-521F, cancelled 1984) Thermal performance determined by ASTM C 653 & C 518.
Sour Cont Batts	Unfaced batts manufactured in widths to permit pressure fit installation in wood or metal stud systems.	R-11 / 3½" R-8 / 2½"	Complies with ASTM C 665, Type I (replaces Fed. Spec. HH-I-521F, cancelled 1984) Thermal performance determined by ASTM C 653 & C 518.
Acou Batt Ceiling	24" × 48" batts with an unflanged kraft paper facing. For use in suspended ceiling systems.	R-19 / 6¼" R-11 / 3½"	Complies with ASTM C 665, Type II, Class C (replaces Fed. Spec. HH-I-521F, cancelled 1984) Thermal performance determined by ASTM C 653 & C 518.
Mas Batt all	Unfaced batts designed for use behind paneling in masonry-type construction where cavity depth is limited by the furring strips. Used with a separate vapor barrier or where no vapor barrier is required or recommended.	R-3 / ¾" R-6 / 1¾"* *(West Coast Only)	Complies with ASTM C 665, Type I (replaces Fed. Spec. HH-I-521F, cancelled 1984) Is noncombustible, meeting test criteria of ASTM E 136. Thermal performance determined by ASTM C 653 and C 518.

*R means resistance to heat flow. The higher the R value, the greater the insulating power.

Specific product info clearly marked

Specific product info clearly marked

Insulation Group

CertainTeed Corporation
750 E. Swedesford Road
PO Box 860
Valley Forge, PA
610-341-70

SHOP DRAWING REVIEW
REVIEWED
MAKE CORRECTIONS NOTED
AMEND & RESUBMIT
REJECTED-SEE REMARKS
B
1/23/05
SIGNATURE DATE

Room for GC's review stamp

Corresponding item code letter written in

SAMPLE PROJECT

Contractor:
S
CONSTRUCTION COMPANY

December 29, 2004

Product: R-19 and R-30 Fiber Glass Insulation

Dear Mr. Fernald,

CertainTeed Fiber Glass Insulation is a member of the U.S Green Building Council and supports their efforts under the Leadership in Energy and Environmental Design (LEED) program.

The EPA Recovered Material Guideline now recommends a recycled content requirement for fiber glass of 20-25% consisting of post-industrial or post-consumer glass cullet. CertainTeed fiber glass insulations meet this requirement on a system-wide basis.

Our product may help contribute to the following LEED Categories:

Energy & Atmosphere	Prereq 2 - Minimum Energy Performance Credit 1 - Optimize Energy Performance
Materials & Resources	Credit 4 - Recycled Content
Indoor Environmental Quality	Credit 7.1 - Thermal Comfort, Comply with ASHRAE 55-1992
Innovation & Design Process	Credit 1.1 - Innovation in Design

In addition, our insulation meets the GREENGUARD™ standards for total particle and Volatile Organic Compound (VOC) emissions, including formaldehyde. Please see the attached certification letter.

I am also enclosing a copy of Insulation Facts # 45, a publication printed by the North American Insulation Manufacturer's Association, of which CertainTeed is a member, which details some ways the industry is working to help create a sustainable environment.

If you need any additional information please do not hesitate to call me.

Sincerely,

Randy Straight

Manager, Residential Technical Services
CertainTeed Corporation
Office: (800) 274-8530 Ext. 6826
Fax: (610) 254-5437
Randall.K.Straight@saint-gobain.com

Specific product info clearly marked

☒ Reviewed, No Exception Taken ☐ Reviewed, Revise As Noted
☐ Revise and Resubmit ☐ Rejected

(Check mark designates action taken)
WBRC Architects Engineers
44 Central Street, Bangor, ME 04401

See Section on "Submittals" of the specifications, and limitations of this review, and responsibility of the contractor. In no case are quantities guaranteed. Review is not to be construed as permitting omission of the specified details necessary or specified but not specifically detailed or mentioned on the reviewed drawings

Date 2-5-05 By

Room for WBRC's review stamp

Technical Services recommendations are for the information of the project designer. The project designer, engineer or architect is responsible for the suitability and performance of a design.

SECTION 01400 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for quality assurance and quality control.

B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
1. Specific quality-assurance and -control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
3. Requirements for Contractor to provide quality-assurance and -control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

C. Related Sections include the following:
1. Division 1 Section "Construction Progress Documentation" for developing a schedule of required tests and inspections.
2. Division 1 Section "Cutting and Patching" for repair and restoration of construction disturbed by testing and inspecting activities.
3. Divisions 2 through 16 Sections for specific test and inspection requirements.

1.3 DEFINITIONS

A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.

B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Architect.

C. Mockups: Full-size, physical assemblies that are constructed on-site. Mockups are used to verify selections made under sample submittals, to demonstrate aesthetic effects and, where indicated, qualities of materials and execution, and to review construction, coordination, testing, or operation; they are not Samples. Approved mockups establish the standard by which the Work will be judged.

D. Laboratory Mockups: Full-size, physical assemblies that are constructed at testing facility to verify performance characteristics.

E. Preconstruction Testing: Tests and inspections that are performed specifically for the Project before products and materials are incorporated into the Work to verify performance or compliance with specified criteria.

F. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with industry standards.

G. Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.

H. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.

I. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

J. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
   1. Using a term 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 tradespeople of the corresponding generic name.

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

1.4 CONFLICTING REQUIREMENTS

A. General: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Architect for a decision before proceeding.

B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

1.5 SUBMITTALS

A. Qualification Data: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

B. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
   1. Specification Section number and title.
   2. Description of test and inspection.
   3. Identification of applicable standards.
   4. Identification of test and inspection methods.

5. Number of tests and inspections required.
6. Time schedule or time span for tests and inspections.
7. Entity responsible for performing tests and inspections.
8. Requirements for obtaining samples.
9. Unique characteristics of each quality-control service.

C. Reports: Prepare and submit certified written reports that include the following:
1. Date of issue.
2. Project title and number.
3. Name, address, and telephone number of testing agency.
4. Dates and locations of samples and tests or inspections.
5. Names of individuals making tests and inspections.
6. Description of the Work and test and inspection method.
7. Identification of product and Specification Section.
8. Complete test or inspection data.
9. Test and inspection results and an interpretation of test results.
10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
12. Name and signature of laboratory inspector.
13. Recommendations on retesting and reinspecting.

D. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.6 QUALITY ASSURANCE

A. General: Qualifications paragraphs in this Article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.

B. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

C. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

D. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar to those indicated for this Project in material, design, and extent.

F. Specialists: Certain sections of the Specifications require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
1. Requirement for specialists shall not supersede building codes and regulations governing the Work.

G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 548; and with additional qualifications specified in individual Sections; and where required by authorities having jurisdiction, that is acceptable to authorities.
1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.

H. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

1.7 QUALITY CONTROL

A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.
1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
2. Payment for these services will be made from testing and inspecting allowances, as authorized by Change Orders.
3. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor.

B. Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
2. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

C. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Division 1 Section "Submittal Procedures."

D. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.

E. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.

3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
6. Do not perform any duties of Contractor.

F. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
1. Access to the Work.
2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
4. Facilities for storage and field curing of test samples.
5. Delivery of samples to testing agencies.
6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
7. Security and protection for samples and for testing and inspecting equipment at Project site.

G. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.

H. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Submit schedule within 30 days of date established for the Notice to Proceed.
1. Distribution: Distribute schedule to Owner, Architect, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

1.8 SPECIAL TESTS AND INSPECTIONS

A. Special Tests and Inspections: Conducted by a qualified testing agency as required by authorities having jurisdiction, as indicated in individual Specification Sections, and as follows:
1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviewing the completeness and adequacy of those procedures to perform the Work.
2. Notifying Architect and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
3. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect with copy to Contractor and to authorities having jurisdiction.
4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
6. Retesting and reinspecting corrected work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 REPAIR AND PROTECTION

A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
   1. Provide materials and comply with installation requirements specified in other Specification Sections. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible.
   2. Comply with the Contract Document requirements for Division 1 Section "Cutting and Patching."

B. Protect construction exposed by or for quality-control service activities.

C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 01400

SECTION 01420 - REFERENCES

PART 1 - GENERAL

1.1 DEFINITIONS

A. General: Basic Contract definitions are included in the Conditions of the Contract.

B. "Approved": The term "approved," when used in conjunction with Architect's action on Contractor's submittals, applications, and requests, is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.

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

D. "Indicated": The term "indicated" refers to graphic representations, notes, or schedules on Drawings; or to other paragraphs or schedules in Specifications and similar requirements in the Contract Documents. Terms such as "shown," "noted," "scheduled," and "specified" are used to help the user locate the reference.

E. "Regulations": The term "regulations" includes laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, as well as rules, conventions, and agreements within the construction industry that control performance of the Work.

F. "Furnish": The term "furnish" means to supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.

G. "Install": The term "install" describes operations at Project site including unloading, temporary storage, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.

H. "Provide": The term "provide" means to furnish and install, complete and ready for the intended use.

I. "Installer": An installer is Contractor or another entity engaged by Contractor, as an employee, subcontractor, or contractor of lower tier, to perform a particular construction operation, including installation, erection, application, and similar operations.

J. The term "experienced," when used with the term "installer," means having successfully completed a minimum of five 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.
   1. Using a term 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 tradespeople of the corresponding generic name.

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

L. Substantial Completion: Refer to Section 3-A Standard General Conditions.

1.2 INDUSTRY STANDARDS

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

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

C. Conflicting Requirements: Where compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Architect for a decision before proceeding.
   1. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of the requirements. Refer uncertainties to Architect for a decision before proceeding.

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

E. Abbreviations and Names: Abbreviations and acronyms are frequently used in the Specifications and other Contract Documents to represent the name of a trade association, standards-developing organization, and authorities having jurisdiction, or other entity in the context of referencing a standard or publication. Where abbreviations and acronyms are used in the Specifications or other Contract Documents, they mean the recognized name of these entities. Refer to Gale Research's "Encyclopedia of Associations" or Columbia Books' "National Trade & Professional Associations of the U.S.," which are available in most libraries.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01420

SECTION 01500 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes requirements for temporary utilities, support facilities, and security and protection facilities.

B. Related Sections include the following:
1. Division 1 Section "Summary" for limitations on utility interruptions and other work restrictions.
2. Division 1 Section "Submittal Procedures" for procedures for submitting copies of implementation and termination schedule and utility reports.
3. Division 1 Section "Execution Requirements" for progress cleaning requirements.
4. Divisions 2 through 16 Sections for temporary heat, ventilation, and humidity requirements for products in those Sections.

1.3 DEFINITIONS

A. Permanent Enclosure: As determined by Architect, permanent or temporary roofing is complete, insulated, and weathertight; exterior walls are insulated and weathertight; and all openings are closed with permanent construction or substantial temporary closures.

1.4 USE CHARGES

A. General: Cost or use charges for temporary facilities shall be included in the Contract Sum. Allow other entities to use temporary services and facilities without cost, including, but not limited to, Owner's construction forces, Architect, occupants of Project, testing agencies, and authorities having jurisdiction.

B. Water Service: Water from Owner's existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

C. Electric Power Service: Electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

1.5 SUBMITTALS

A. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.

1.6 QUALITY ASSURANCE

A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

1.7 PROJECT CONDITIONS

A. Temporary Use of Permanent Facilities: Installer of each permanent service shall assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Lumber and Plywood: Comply with requirements in Division 6 Section " Miscellaneous Carpentry."

2.2 TEMPORARY FACILITIES

A. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.
1. Store combustible materials apart from building.

2.3 EQUIPMENT

A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.

B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

A. Water Service: Use of Owner's existing water service facilities will be permitted, as long as facilities are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.

1. Where installations below an outlet might be damaged by spillage or leakage, provide a drip pan of suitable size to minimize water damage. Drain accumulated water promptly from pans.

B. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.
1. Toilets: Use of Owner's existing toilet facilities will be permitted, as long as facilities are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.

C. Electric Power Service: Use of Owner's existing electric power service will be permitted, as long as equipment is maintained in a condition acceptable to Owner.

3.3 SUPPORT FACILITIES INSTALLATION

A. General: Comply with the following:
1. Provide incombustible construction for offices, shops, and sheds located within construction area or within 30 feet of building lines. Comply with NFPA 241.
2. Maintain support facilities until near Substantial Completion. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.

B. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.
1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Security Enclosure and Lockup: Install substantial temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security.

B. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.

C. Covered Walkway: Erect structurally adequate, protective, covered walkway for passage of individuals along adjacent public street(s). Coordinate with entrance gates, other facilities, and obstructions. Comply with regulations of authorities having jurisdiction.
1. Construct covered walkways using scaffold or shoring framing.
2. Provide wood-plank overhead decking, protective plywood enclosure walls, handrails, barricades, warning signs, lights, safe and well-drained walkways, and similar provisions for protection and safe passage.
3. Extend back wall beyond the structure to complete enclosure fence.
4. Paint and maintain in a manner approved by Owner and Architect.

D. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241.
1. Prohibit smoking in construction areas.
2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.

3.5 OPERATION, TERMINATION, AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

B. Maintenance: Maintain facilities in good operating condition until removal.
   1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

C. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
   1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
   2. Remove temporary paving not intended for or acceptable for integration into permanent paving. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.
   3. At Substantial Completion, clean and renovate permanent facilities used during construction period. Comply with final cleaning requirements specified in Division 1 Section "Closeout Procedures."

END OF SECTION 01500

SECTION 01600 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; product substitutions; and comparable products.

B. Related Sections include the following:
1. Division 1 Section "Allowances" for products selected under an allowance.
2. Division 1 Section "Alternates" for products selected under an alternate.
3. Division 1 Section "References" for applicable industry standards for products specified.
4. Division 1 Section "Closeout Procedures" for submitting warranties for Contract closeout.
5. Divisions 2 through 16 Sections for specific requirements for warranties on products and installations specified to be warranted.

1.3 DEFINITIONS

A. Products: Items purchased for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.
2. New Products: Items that have not previously been incorporated into another project or facility, except that products consisting of recycled-content materials are allowed, unless explicitly stated otherwise. Products salvaged or recycled from other projects are not considered new products.
3. Comparable Product: Product that is demonstrated and approved through submittal process, or where indicated as a product substitution, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

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

C. Basis-of-Design Product Specification: Where a specific manufacturer's product is named and accompanied by the words "basis of design," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of other named manufacturers.

1.4 SUBMITTALS

A. Product List: Submit a list, in tabular from, showing specified products. Include generic names of products required. Include manufacturer's name and proprietary product names for each product.
   1. Coordinate product list with Contractor's Construction Schedule and the Submittals Schedule.
   2. Form: Tabulate information for each product under the following column headings:
      a. Specification Section number and title.
      b. Generic name used in the Contract Documents.
      c. Proprietary name, model number, and similar designations.
      d. Manufacturer's name and address.
      e. Supplier's name and address.
      f. Installer's name and address.
      g. Projected delivery date or time span of delivery period.
      h. Identification of items that require early submittal approval for scheduled delivery date.
   3. Initial Submittal: Within 30 days after date of commencement of the Work, submit 3 copies of initial product list. Include a written explanation for omissions of data and for variations from Contract requirements.
      a. At Contractor's option, initial submittal may be limited to product selections and designations that must be established early in Contract period.
   4. Completed List: Within 60 days after date of commencement of the Work, submit 3 copies of completed product list. Include a written explanation for omissions of data and for variations from Contract requirements.
   5. Architect's Action: Architect will respond in writing to Contractor within 15 days of receipt of completed product list. Architect's response will include a list of unacceptable product selections and a brief explanation of reasons for this action. Architect's response, or lack of response, does not constitute a waiver of requirement to comply with the Contract Documents.

B. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
   1. Substitution Request Form: Use facsimile of form provided at end of Section.
   2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
      a. Statement indicating why specified material or product cannot be provided.
      b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution.
      c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
      d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
      e. Samples, where applicable or requested.
      f. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
      g. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
      h. Research/evaluation reports evidencing compliance with building code in effect for Project, from a model code organization acceptable to authorities having jurisdiction.
      i. Detailed comparison of Contractor's Construction Schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating lack of availability or delays in delivery.
      j. Cost information, including a proposal of change, if any, in the Contract Sum.

k. Contractor's certification that proposed substitution complies with requirements in the Contract Documents and is appropriate for applications indicated.
l. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within 7 days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.
   a. Form of Acceptance: Change Order.
   b. Use product specified if Architect cannot make a decision on use of a proposed substitution within time allocated.

C. Comparable Product Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
1. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Architect will notify Contractor of approval or rejection of proposed comparable product request within 15 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.
   a. Form of Approval: As specified in Division 1 Section "Submittal Procedures."
   b. Use product specified if Architect cannot make a decision on use of a comparable product request within time allocated.

D. Basis-of-Design Product Specification Submittal: Comply with requirements in Division 1 Section "Submittal Procedures." Show compliance with requirements.

1.5 QUALITY ASSURANCE

A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, product selected shall be compatible with products previously selected, even if previously selected products were also options.
1. Each contractor is responsible for providing products and construction methods compatible with products and construction methods of other contractors.
2. If a dispute arises between contractors over concurrently selectable but incompatible products, Architect will determine which products shall be used.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions.

B. Delivery and Handling:
1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
4. Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.

C. Storage:
1. Store products to allow for inspection and measurement of quantity or counting of units.
2. Store materials in a manner that will not endanger Project structure.
3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
4. Store cementitious products and materials on elevated platforms.
5. Store foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
6. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
7. Protect stored products from damage and liquids from freezing.
8. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

1.7 PRODUCT WARRANTIES

A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
1. Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
2. Special Warranty: Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for Owner.

B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval before final execution.
1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
2. Specified Form: When specified forms are included with the Specifications, prepare a written document using appropriate form properly executed.
3. Refer to Divisions 2 through 16 Sections for specific content requirements and particular requirements for submitting special warranties.

C. Submittal Time: Comply with requirements in Division 1 Section "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, that are new at time of installation.
1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
4. Where products are accompanied by the term "as selected," Architect will make selection.
5. Where products are accompanied by the term "match sample," sample to be matched is Architect's.

6. Descriptive, performance, and reference standard requirements in the Specifications establish "salient characteristics" of products.
7. Or Equal: Where products are specified by name and accompanied by the term "or equal" or "or approved equal" or "or approved," comply with provisions in Part 2 "Comparable Products" Article to obtain approval for use of an unnamed product.

B. Product Selection Procedures:
1. Product: Where Specifications name a single product and manufacturer, provide the named product that complies with requirements.
2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements.
3. Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed that complies with requirements.
4. Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements.
5. Available Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.
6. Available Manufacturers: Where Specifications include a list of manufacturers, provide a product by one of the manufacturers listed, or an unnamed manufacturer, that complies with requirements. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.
7. Product Options: Where Specifications indicate that sizes, profiles, and dimensional requirements on Drawings are based on a specific product or system, provide the specified product or system. Comply with provisions in Part 2 "Product Substitutions" Article for consideration of an unnamed product or system.
8. Basis-of-Design Product: Where Specifications name a product and include a list of manufacturers, provide the specified product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product by the other named manufacturers.
9. Visual Matching Specification: Where Specifications require matching an established Sample, select a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.
   a. If no product available within specified category matches and complies with other specified requirements, comply with provisions in Part 2 "Product Substitutions" Article for proposal of product.
10. Visual Selection Specification: Where Specifications include the phrase "as selected from manufacturer's colors, patterns, textures" or a similar phrase, select a product that complies with other specified requirements.
    a. Standard Range: Where Specifications include the phrase "standard range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, density, or texture from manufacturer's product line that does not include premium items.
    b. Full Range: Where Specifications include the phrase "full range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 PRODUCT SUBSTITUTIONS

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

1. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
2. Requested substitution does not require extensive revisions to the Contract Documents.
3. Requested substitution is consistent with the Contract Documents and will produce indicated results.
4. Substitution request is fully documented and properly submitted.
5. Requested substitution will not adversely affect Contractor's Construction Schedule.
6. Requested substitution has received necessary approvals of authorities having jurisdiction.
7. Requested substitution is compatible with other portions of the Work.
8. Requested substitution has been coordinated with other portions of the Work.
9. Requested substitution provides specified warranty.
10. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

2.3 COMPARABLE PRODUCTS

A. Conditions: Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
   1. Evidence that the proposed product does not require extensive revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
   2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
   3. Evidence that proposed product provides specified warranty.
   4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
   5. Samples, if requested.

PART 3 - EXECUTION (Not Used)

END OF SECTION 01600

SECTION 01700 - EXECUTION REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:
   1. General installation of products.
   2. Progress cleaning.
   3. Protection of installed construction.
   4. Correction of the Work.

B. Related Sections include the following:
   1. Division 1 Section "Project Management and Coordination" for procedures for coordinating field engineering with other construction activities.
   2. Division 1 Section "Submittal Procedures" for submitting surveys.
   3. Division 1 Section "Cutting and Patching" for procedural requirements for cutting and patching necessary for the installation or performance of other components of the Work.
   4. Division 1 Section "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Existing Conditions: The existence and location of site improvements, utilities, and other construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of mechanical and electrical systems and other construction affecting the Work.
   1. Before construction, verify the location and points of connection of utility services.

B. Acceptance of Conditions: Examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
   1. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
      a. Description of the Work.
      b. List of detrimental conditions, including substrates.
      c. List of unacceptable installation tolerances.
      d. Recommended corrections.

2. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
3. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
4. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
5. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Existing Utility Information: Furnish information to local utility and Owner that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.

B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Architect. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents.

3.3 INSTALLATION

A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
1. Make vertical work plumb and make horizontal work level.
2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
3. Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.
4. Maintain minimum headroom clearance of 8 feet in spaces without a suspended ceiling.

B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.

D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

E. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.

F. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

G. Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.
   1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
   2. Allow for building movement, including thermal expansion and contraction.
   3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

H. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.

I. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.4 PROGRESS CLEANING

A. General: Clean Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.
   1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
   2. Do not hold materials more than 7 days during normal weather or 3 days if the temperature is expected to rise above 80 deg F.
   3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.

B. Site: Maintain Project site free of waste materials and debris.

C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
   1. Remove liquid spills promptly.
   2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

G. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.

H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

J. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.5 PROTECTION OF INSTALLED CONSTRUCTION

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

B. Comply with manufacturer's written instructions for temperature and relative humidity.

3.6 CORRECTION OF THE WORK

A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Division 1 Section "Cutting and Patching."
   1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.

B. Restore permanent facilities used during construction to their specified condition.

C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.

D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.

END OF SECTION 01700

SECTION 01731 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes procedural requirements for cutting and patching.

B. Related Sections include the following:
1. Division 1 Section "Selective Demolition" for demolition of selected portions of the building.
2. Divisions 2 through 16 Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.

1.3 DEFINITIONS

A. Cutting: Removal of in-place construction necessary to permit installation or performance of other Work.

B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

1.4 QUALITY ASSURANCE

A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.
1. Concrete Floor and Roof Slabs
2. Metal Decking
3. Concrete Masonry Units
4.

B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. Operating elements include the following:
1. Primary operational systems and equipment.
2. Air or smoke barriers.
3. Fire-suppression systems.
4. Mechanical systems piping and ducts.
5. Control systems.
6. Communication systems.
7. Conveying systems.
8. Electrical wiring systems.
9. Operating systems of special construction in Division 13 Sections.

C. Miscellaneous Elements: Do not cut and patch miscellaneous elements or related components in a manner that could change their load-carrying capacity that results in reducing their capacity to perform as

intended, or that result in increased maintenance or decreased operational life or safety. Miscellaneous elements include the following:

1. Water, moisture, or vapor barriers.
2. Membranes and flashings.
3. Exterior curtain-wall construction.
4. Equipment supports.
5. Piping, ductwork, vessels, and equipment.
6. Noise- and vibration-control elements and systems.

D. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

E. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

1.5 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Comply with requirements specified in other Sections.

B. In-Place Materials: Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.

1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.

1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.
2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Temporary Support: Provide temporary support of Work to be cut.

B. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

D. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.

3.3 PERFORMANCE

A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

B. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
4. Excavating and Backfilling: Comply with requirements in applicable Division 2 Sections where required by cutting and patching operations.
5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
6. Proceed with patching after construction operations requiring cutting are complete.

C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.
1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
   a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
   b. Restore damaged pipe covering to its original condition.
3. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.

D. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

END OF SECTION 01731

SECTION 01732 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes the following:
1. Demolition and removal of selected portions of building or structure.
2. Demolition and removal of selected site elements.
3. Salvage of existing items to be reused or recycled.

B. Related Sections include the following:
1. Division 1 Section "Summary" for use of premises, and phasing, and Owner-occupancy requirements.
2. Division 1 Section "Temporary Facilities and Controls" for temporary construction and environmental-protection measures for selective demolition operations.
3. Division 1 Section "Cutting and Patching" for cutting and patching procedures.

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 ready for reuse.

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

1.5 SUBMITTALS

A. Qualification Data: For demolition firm and professional engineer.

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 and of Owner's partial occupancy of completed Work.
   7. Means of protection for items to remain and items in path of waste removal from building.

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

1.6 QUALITY ASSURANCE

A. Demolition Firm Qualifications: An experienced firm that has specialized in demolition work similar in material and extent to that indicated for this Project.

B. Refrigerant Recovery Technician Qualifications: Certified by an EPA-approved certification program.

C. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

D. Standards: Comply with ANSI A10.6 and NFPA 241.

E. Predemolition Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination."

1.7 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 1 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.

1.8 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that utilities have been disconnected and capped.

B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.

C. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.

D. 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.

E. Engage a professional engineer to survey condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective demolition operations.

F. Survey of Existing Conditions: Record existing conditions by use of measured drawings preconstruction photographs and templates.
1. Comply with requirements specified in Division 1 Section "Photographic Documentation."
2. 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.

G. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

A. Existing Services/Systems: Maintain services/systems indicated to remain and protect them against damage during selective demolition operations.
1. Comply with requirements for existing services/systems interruptions specified in Division 1 Section "Summary."

B. Service/System Requirements: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.
1. Owner will arrange to shut off indicated services/systems when requested by Contractor.
2. Arrange to shut off indicated utilities with utility companies.
3. If services/systems are required to be removed, relocated, or abandoned, before proceeding with selective demolition provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
4. Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing.
   a. Where entire wall is to be removed, existing services/systems may be removed with removal of the wall.

3.3 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 1 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.
   5. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Division 1 Section "Temporary Facilities and Controls."

C. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
   1. Strengthen or add new supports when required during progress of selective demolition.

3.4 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 fire watch and 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 1 Section "Construction Waste Management."

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 cleaned and reinstalled in their original locations after selective demolition operations are complete.

3.5 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 in an EPA-approved landfill.
   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.

B. Burning: Do not burn demolished materials.

C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

3.6 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

3.7 SELECTIVE DEMOLITION SCHEDULE

A. Existing Items and Construction to Be Removed: As shown on the demolition and removals drawings.

END OF SECTION 01732

SECTION 01770 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
   1. Inspection procedures.
   2. Warranties.
   3. Final cleaning.

B. Related Sections include the following:
   1. Division 1 Section "Payment Procedures" for requirements for Applications for Payment for Substantial and Final Completion.
   2. Division 1 Section "Execution Requirements" for progress cleaning of Project site.
   3. Division 1 Section "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
   4. Division 1 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.

1.3 SUBSTANTIAL COMPLETION

A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.
   1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
   2. Advise Owner of pending insurance changeover requirements.
   3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
   4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
   5. Prepare and submit Project Record Documents, operation and maintenance manuals, Final Completion construction photographs, damage or settlement surveys, property surveys, and similar final record information.
   6. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
   7. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
   8. Complete startup testing of systems.
   9. Submit test/adjust/balance records.
   10. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
   11. Advise Owner of changeover in heat and other utilities.
   12. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
   13. Complete final cleaning requirements, including touchup painting.
   14. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.
   1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
   2. Results of completed inspection will form the basis of requirements for Final Completion.

1.4 FINAL COMPLETION

A. Final Completion shall be within 30 days of the date of Substantial Completion and will include

B. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:
   1. Submit a final Application for Payment according to Division 1 Section "Payment Procedures."
   2. Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
   3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
   4. Submit pest-control final inspection report and warranty.
   5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training videotapes.

C. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
   1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.5 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Preparation: Submit three copies of list. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
   1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor.
   2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
   3. Include the following information at the top of each page:
      a. Project name.
      b. Date.
      c. Name of Architect.
      d. Name of Contractor.
      e. Page number.

1.6 WARRANTIES

A. Submittal Time: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.

G. Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.
   1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
   2. Allow for building movement, including thermal expansion and contraction.
   3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

H. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.

I. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.4 PROGRESS CLEANING

A. General: Clean Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.
   1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
   2. Do not hold materials more than 7 days during normal weather or 3 days if the temperature is expected to rise above 80 deg F.
   3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.

B. Site: Maintain Project site free of waste materials and debris.

C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
   1. Remove liquid spills promptly.
   2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

G. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.

H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

J. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.5 PROTECTION OF INSTALLED CONSTRUCTION

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

B. Comply with manufacturer's written instructions for temperature and relative humidity.

3.6 CORRECTION OF THE WORK

A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Division 1 Section "Cutting and Patching."
   1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.

B. Restore permanent facilities used during construction to their specified condition.

C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.

D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.

END OF SECTION 01700

SECTION 01731 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes procedural requirements for cutting and patching.

B. Related Sections include the following:
1. Division 1 Section "Selective Demolition" for demolition of selected portions of the building.
2. Divisions 2 through 16 Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.

1.3 DEFINITIONS

A. Cutting: Removal of in-place construction necessary to permit installation or performance of other Work.

B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

1.4 QUALITY ASSURANCE

A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.
1. Concrete Floor and Roof Slabs
2. Metal Decking
3. Concrete Masonry Units
4.

B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. Operating elements include the following:
1. Primary operational systems and equipment.
2. Air or smoke barriers.
3. Fire-suppression systems.
4. Mechanical systems piping and ducts.
5. Control systems.
6. Communication systems.
7. Conveying systems.
8. Electrical wiring systems.
9. Operating systems of special construction in Division 13 Sections.

C. Miscellaneous Elements: Do not cut and patch miscellaneous elements or related components in a manner that could change their load-carrying capacity that results in reducing their capacity to perform as

intended, or that result in increased maintenance or decreased operational life or safety. Miscellaneous elements include the following:

1. Water, moisture, or vapor barriers.
2. Membranes and flashings.
3. Exterior curtain-wall construction.
4. Equipment supports.
5. Piping, ductwork, vessels, and equipment.
6. Noise- and vibration-control elements and systems.

D. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

E. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

1.5 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Comply with requirements specified in other Sections.

B. In-Place Materials: Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.

1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.

1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.
2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Temporary Support: Provide temporary support of Work to be cut.

B. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

D. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.

3.3 PERFORMANCE

A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

B. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
4. Excavating and Backfilling: Comply with requirements in applicable Division 2 Sections where required by cutting and patching operations.
5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
6. Proceed with patching after construction operations requiring cutting are complete.

C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.
1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
   a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
   b. Restore damaged pipe covering to its original condition.
3. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.

D. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

END OF SECTION 01731

SECTION 01732 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes the following:
1. Demolition and removal of selected portions of building or structure.
2. Demolition and removal of selected site elements.
3. Salvage of existing items to be reused or recycled.

B. Related Sections include the following:
1. Division 1 Section "Summary" for use of premises, and phasing, and Owner-occupancy requirements.
2. Division 1 Section "Temporary Facilities and Controls" for temporary construction and environmental-protection measures for selective demolition operations.
3. Division 1 Section "Cutting and Patching" for cutting and patching procedures.

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 ready for reuse.

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

1.5 SUBMITTALS

A. Qualification Data: For demolition firm and professional engineer.

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 and of Owner's partial occupancy of completed Work.
   7. Means of protection for items to remain and items in path of waste removal from building.

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

1.6 QUALITY ASSURANCE

A. Demolition Firm Qualifications: An experienced firm that has specialized in demolition work similar in material and extent to that indicated for this Project.

B. Refrigerant Recovery Technician Qualifications: Certified by an EPA-approved certification program.

C. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

D. Standards: Comply with ANSI A10.6 and NFPA 241.

E. Predemolition Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination."

1.7 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 1 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.

1.8 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that utilities have been disconnected and capped.

B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.

C. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.

D. 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.

E. Engage a professional engineer to survey condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective demolition operations.

F. Survey of Existing Conditions: Record existing conditions by use of measured drawings preconstruction photographs and templates.
1. Comply with requirements specified in Division 1 Section "Photographic Documentation."
2. 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.

G. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

A. Existing Services/Systems: Maintain services/systems indicated to remain and protect them against damage during selective demolition operations.
1. Comply with requirements for existing services/systems interruptions specified in Division 1 Section "Summary."

B. Service/System Requirements: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.
1. Owner will arrange to shut off indicated services/systems when requested by Contractor.
2. Arrange to shut off indicated utilities with utility companies.
3. If services/systems are required to be removed, relocated, or abandoned, before proceeding with selective demolition provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
4. Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing.
   a. Where entire wall is to be removed, existing services/systems may be removed with removal of the wall.

3.3 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 1 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.
   5. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Division 1 Section "Temporary Facilities and Controls."

C. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
   1. Strengthen or add new supports when required during progress of selective demolition.

3.4 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 fire watch and 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 1 Section "Construction Waste Management."

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 cleaned and reinstalled in their original locations after selective demolition operations are complete.

3.5 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 in an EPA-approved landfill.
   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.

B. Burning: Do not burn demolished materials.

C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

3.6 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

3.7 SELECTIVE DEMOLITION SCHEDULE

A. Existing Items and Construction to Be Removed: As shown on the demolition and removals drawings.

END OF SECTION 01732

SECTION 01770 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
   1. Inspection procedures.
   2. Warranties.
   3. Final cleaning.

B. Related Sections include the following:
   1. Division 1 Section "Payment Procedures" for requirements for Applications for Payment for Substantial and Final Completion.
   2. Division 1 Section "Execution Requirements" for progress cleaning of Project site.
   3. Division 1 Section "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
   4. Division 1 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.

1.3 SUBSTANTIAL COMPLETION

A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.
   1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
   2. Advise Owner of pending insurance changeover requirements.
   3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
   4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
   5. Prepare and submit Project Record Documents, operation and maintenance manuals, Final Completion construction photographs, damage or settlement surveys, property surveys, and similar final record information.
   6. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
   7. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
   8. Complete startup testing of systems.
   9. Submit test/adjust/balance records.
   10. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
   11. Advise Owner of changeover in heat and other utilities.
   12. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
   13. Complete final cleaning requirements, including touchup painting.
   14. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.
   1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
   2. Results of completed inspection will form the basis of requirements for Final Completion.

1.4 FINAL COMPLETION

A. Final Completion shall be within 30 days of the date of Substantial Completion and will include

B. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:
   1. Submit a final Application for Payment according to Division 1 Section "Payment Procedures."
   2. Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
   3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
   4. Submit pest-control final inspection report and warranty.
   5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training videotapes.

C. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
   1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.5 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Preparation: Submit three copies of list. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
   1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor.
   2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
   3. Include the following information at the top of each page:
      a. Project name.
      b. Date.
      c. Name of Architect.
      d. Name of Contractor.
      e. Page number.

1.6 WARRANTIES

A. Submittal Time: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, metal wall panel supports, and other conditions affecting performance of work.
   1. Examine wall sheathing to verify that sheathing joints are supported by framing or blocking and that installation is within flatness tolerances required by metal wall panel manufacturer.
   2. Verify that weather-resistant sheathing paper has been installed over sheathing or backing substrate to prevent air infiltration or water penetration.

B. Examine roughing-in for components and systems penetrating metal wall panels to verify actual locations of penetrations relative to seam locations of metal wall panels before metal wall panel installation.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Miscellaneous Framing: Install subgirts, base angles, sills, furring, and other miscellaneous wall panel support members and anchorages according to ASTM C 754 and metal wall panel manufacturer's written recommendations.

3.3 METAL WALL PANEL INSTALLATION

A. General: Install metal wall panels according to manufacturer's written instructions in orientation, sizes, and locations indicated on Drawings. Install panels perpendicular to girts and subgirts unless otherwise indicated. Anchor metal wall panels and other components of the Work securely in place, with provisions for thermal and structural movement.
   1. Shim or otherwise plumb substrates receiving metal wall panels.
   2. Flash and seal metal wall panels at perimeter of all openings. Fasten with self-tapping screws. Do not begin installation until weather barrier and flashings that will be concealed by metal wall panels are installed.
   3. Install screw fasteners in predrilled holes.
   4. Locate and space fastenings in uniform vertical and horizontal alignment.
   5. Install flashing and trim as metal wall panel work proceeds.
   6. Locate panel splices over, but not attached to, structural supports. Stagger panel splices and end laps to avoid a four-panel lap splice condition.
   7. Apply elastomeric sealant continuously between metal base channel (sill angle) and concrete and elsewhere as indicated or, if not indicated, as necessary for waterproofing.
   8. Align bottom of metal wall panels and fasten with blind rivets, bolts, or self-tapping screws. Fasten flashings and trim around openings and similar elements with self-tapping screws.
   9. Provide weathertight escutcheons for pipe and conduit penetrating exterior walls.

B. Fasteners:
   1. Steel Wall Panels: Use stainless-steel fasteners for surfaces exposed to the exterior; use galvanized steel fasteners for surfaces exposed to the interior.

C. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action as recommended by metal wall panel manufacturer.

D. Joint Sealers: Install gaskets, joint fillers, and sealants where indicated and where required for weathertight performance of metal wall panel assemblies. Provide types of gaskets, fillers, and sealants indicated or, if not indicated, types recommended by metal wall panel manufacturer.
   1. Seal metal wall panel end laps with double beads of tape or sealant, full width of panel. Seal side joints where recommended by metal wall panel manufacturer.
   2. Prepare joints and apply sealants to comply with requirements in Division 07 Section "Joint Sealants."

E. Lap-Seam Metal Wall Panels: Fasten metal wall panels to supports with fasteners at each lapped joint at location and spacing recommended by manufacturer.
   1. Lap ribbed or fluted sheets one full rib corrugation. Apply panels and associated items for neat and weathertight enclosure. Avoid "panel creep" or application not true to line.
   2. Provide metal-backed washers under heads of exposed fasteners bearing on weather side of metal wall panels.
   3. Locate and space exposed fasteners in uniform vertical and horizontal alignment. Use proper tools to obtain controlled uniform compression for positive seal without rupture of washer.
   4. Install screw fasteners with power tools having controlled torque adjusted to compress washer tightly without damage to washer, screw threads, or panels. Install screws in predrilled holes.
   5. Provide sealant tape at lapped joints of metal wall panels and between panels and protruding equipment, vents, and accessories.
   6. Apply a continuous ribbon of sealant tape to weather-side surface of fastenings on end laps; on side laps of nesting-type panels; on side laps of corrugated nesting-type, ribbed, or fluted panels; and elsewhere as needed to make panels weathertight.
   7. At panel splices, nest panels with minimum 6-inch end lap, sealed with butyl-rubber sealant and fastened together by interlocking clamping plates.

F. Zee Clips: Provide Zee clips of size indicated or, if not indicated, as required to act as standoff from subgirts for thickness of insulation indicated. Attach to subgirts with fasteners.

3.4 ACCESSORY INSTALLATION

A. General: Install accessories with positive anchorage to building and weathertight mounting, and provide for thermal expansion. Coordinate installation with flashings and other components.
   1. Install components required for a complete metal wall panel assembly including trim, copings, corners, seam covers, flashings, sealants, gaskets, fillers, closure strips, and similar items.

B. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints, and seams that will be permanently watertight and weather resistant.
   1. Install exposed flashing and trim that is without excessive oil canning, buckling, and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates and to result in waterproof and weather-resistant performance.
   2. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet with no joints allowed within 24 inches of corner or intersection. Where lapped expansion provisions cannot be used or would not be sufficiently weather resistant and waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with mastic sealant (concealed within joints).

3.5 CLEANING AND PROTECTION

A. Remove temporary protective coverings and strippable films, if any, as metal wall panels are installed, unless otherwise indicated in manufacturer's written installation instructions. On completion of metal wall panel installation, clean finished surfaces as recommended by metal wall panel manufacturer. Maintain in a clean condition during construction.

B. After metal wall panel installation, clear weep holes and drainage channels of obstructions, dirt, and sealant.

C. Replace metal wall panels that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 074213

SECTION 07532 - ETHYLENE-PROPYLENE-DIENE-MONOMER (EPDM) 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. Adhered EPDM membrane roofing system.
2. Roof insulation.
3. Fascia system.

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. FM Approvals Listing: Provide membrane roofing, base flashings, and component materials that comply with requirements in FM Approvals 4450 and FM Approvals 4470 as part of a membrane roofing system, and that are listed in FM Approvals' "RoofNav" for Class 1 or noncombustible construction, as applicable. Identify materials with FM Approvals' markings.
1. Fire/Windstorm Classification: Class 1A-75.

1.5 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.

C. Samples for Verification: For the following products, in manufacturer's standard sizes:
1. Sheet roofing, of color specified, including T-shaped side and end lap seam.
2. Roof insulation.
3. Six insulation fasteners of each type, length, and finish.
4. Six roof cover fasteners of each type, length, and finish.

D. Qualification Data: For qualified Installer and manufacturer.

E. 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.

F. Manufacturer's installation rating of the roofing contractor.

G. 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.

H. Field quality-control reports.

I. Maintenance Data: For membrane roofing system to include in maintenance manuals.

J. Warranties: Sample of special warranties.

K. Inspection Report: Copy of roofing system manufacturer's inspection report of completed roofing installation.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: A qualified manufacturer that is FM Approvals approved for membrane roofing system identical to that used for this Project.

B. Installer Qualifications: Engage an experienced installer to perform work of this Section who has specialized in installing roofing similar to that required for this Project and who is approved, authorized, or licensed by the roofing system manufacturer to install manufacturer's product. Contractor shall have installed a minimum of 500,000 square feet and have a manufacturer's installation rating of 9.0 or better.
1. Installer for GAF products shall be a Master Select or Master Certified Contractor.
2. Work associated with single-ply membrane roofing, including (but not limited to) insulation, flashing, and membrane sheet joint sealers, shall be performed by Installer of this Work.

C. Source Limitations: Obtain components including roof insulation and fasteners Insert products 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. Preliminary Roofing Conference: Before starting roofing installation, 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. Review requirements for deck substrate conditions and finishes, 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.

G. Upon completion of the installation, an inspection shall be made by the system manufacturer to ascertain that the roofing system has been installed according to the applicable manufacturer's specifications and details. No "early bird" warranty will be accepted. The results of the warranty inspection shall be submitted in writing to Owner for their review and records.

1.7 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.

1.8 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.

1.9 WARRANTY

A. General Warranty: The warranties specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by the Contractor under requirements of the Contract Documents.

B. A manufacturer's sole source 15-year written Total Roofing System Warranty shall be provided with a peak gust wind speed limitation of 72 mph (measured 30 feet above the ground). Warranty shall cover both labor and materials with no dollar limitation and shall state that the Total roofing System will remain in a watertight condition. The contractor shall provide as part of the shop drawing submittal process, certification indicating that the manufacturer has reviewed and has agreed to such wind coverage indicated.

1. Total Roofing System is defined as the following materials and provided by the roof system manufacturer: membrane, flashings, counterflashings, adhesives, sealants, insulation, overlayment, fasteners, fastener plates, fastener strips, hard rubber, metal edging, preformed fascia system. Metal termination anchor bars, roof drain flashing and sealants, and any other product utilized in this system installation.
2. The warranty shall be for fifteen (15) years starting after final acceptance of the total roofing system by the roof system manufacturer. Defective materials or installation shall be removed, properly disposed of, and replaced at the manufacturer's expense.
3. The warranty shall provide that if within the warranty period the roofing system becomes non-watertight or if the elastomeric sheet splits, tears, or separates at the seams because of defective materials and/or materials and cost thereof shall be the responsibility of the manufacturer. Should the manufacturer or his approve applicator fail to perform repairs within 72 hours of notification, the warranty will not be voided because of work being performed by others to repair the roofing regardless of the manufacturer's warranty to the contrary.
4. The total Roofing System shall be applied by a roofing Contractor approved by the system manufacturer. After inspection and acceptance of the installed roof system, the warranty will be issued.

PART 2 - PRODUCTS

2.1 EPDM MEMBRANE ROOFING

A. EPDM: ASTM D 4637, Type I, non-reinforced, uniform, flexible EPDM sheet.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. Carlisle SynTec Incorporated.
   b. Firestone Building Products.
   c. GAF Materials Corporation.
   d. Versico Incorporated.
2. Thickness: 60 mils, nominal.
3. Exposed Face Color: Black.

2.2 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. Contact Adhesive: 80 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. Protection Sheet: Epichlorohydrin or neoprene non-reinforced flexible sheet, 55- to 60-mil- thick, recommended by EPDM manufacturer for resistance to hydrocarbons, non-aromatic solvents, grease, and oil.

D. Bonding Adhesive: Manufacturer's standard.

E. Seaming Material: Manufacturer's standard, synthetic-rubber polymer primer and 6-inch- wide minimum, butyl splice tape with release film.

F. Lap Sealant: Manufacturer's standard, single-component sealant, colored to match membrane roofing.

G. Water Cutoff Mastic: Manufacturer's standard butyl mastic sealant.

H. Metal Termination Bars: Manufacturer's standard, predrilled stainless-steel or aluminum bars, approximately 1 by 1/8 inch thick; with anchors.

I. 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.

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.

2.3 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 1, Grade 2, felt or glass-fiber mat facer on both major surfaces.

C. Tapered Insulation: Provide factory-tapered insulation boards fabricated to slope of 1/4 inch per 12 inches unless otherwise indicated.

D. Provide preformed saddles, crickets, tapered edge strips, and other insulation shapes where indicated for sloping to drain. Fabricate to slopes indicated.

2.4 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 to substrate, and acceptable to roofing system manufacturer.

2.5 FASCIA SYSTEM

A. Provide fasciae in shapes and sizes indicated. Include anchor plates; cleats or other attachment devices; concealed splice plates; and trim and other accessories indicated or required for complete installation, with no exposed fasteners.
   1. Provide scupper components where indicated on the drawings.

B. Provide exposed fascia components fabricated from the following metal:
   1. Extruded aluminum in thickness indicated, but not less than 0.040 inch.
   2. Finish: Manufacturer's standard 2-coat, thermocured system composed of specially formulated inhibitive primer and fluoropolymer color topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight; complying with AAMA 1402, Test Method 7. Color as selected by the Engineer.
      a. Hickman: Extruded TerminEdge Roof Edging TEX-675.
      b. Metal-Era: Anchor-Tite Fascia System. AF-70.

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 Division 05.

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.

3.3 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.

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. Mechanically Fastened Insulation: Install each layer of insulation and secure 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 Approvals' "RoofNav" for specified Windstorm Resistance Classification.
2. Fasten insulation to resist uplift pressure at corners, perimeter, and field of roof.

3.4 ADHERED MEMBRANE ROOFING INSTALLATION

A. Adheremembrane 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. In addition to adhering, mechanically fasten membrane roofing securely at terminations, penetrations, and perimeters.

F. Apply membrane roofing with side laps shingled with slope of roof deck where possible.

G. 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.

H. Repair tears, voids, and lapped seams in roofing that does not comply with requirements.

I. Spread sealant or mastic bed over deck drain flange at roof drains and securely seal membrane roofing in place with clamping ring.

3.5 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.

3.6 FASCIA SYSTEM INSTALLATION

A. Comply with manufacturer's written installation instructions. Anchor products securely to structural substrates to withstand lateral and thermal stresses and inward and outward loading pressures.

B. Expansion Provisions: Install running lengths to allow controlled expansion for movement of metal components in relation not only to one another but also to adjoining dissimilar materials, including flashing and roofing membrane materials, in a manner sufficient to prevent water leakage, deformation, or damage.

3.7 FIELD QUALITY CONTROL

A. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion.
1. Notify Architect or Owner 48 hours in advance of the date and time of inspection.

B. Repair or remove and replace components of membrane roofing system where inspections indicate that they do not comply with specified requirements.

C. Additional inspections, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.8 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.

END OF SECTION 07532

SECTION 07620 - 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 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following sheet metal flashing and trim:
   1. Formed low-slope roof flashing and trim.
   2. Formed wall flashing and trim.

B. Related Sections include the following:
   1. Division 6 Section "Miscellaneous Carpentry" for wood nailers, curbs, and blocking.
   2. Division 7 Section "Sheet Metal Roofing and Siding" for on-site, roll-formed sheet metal roofing, siding, flashing and trim not part of sheet metal flashing and trim.
   3. Division 7 Section "Joint Sealants" for field-applied sheet metal flashing and trim sealants.

1.3 PERFORMANCE REQUIREMENTS

A. General: Install sheet metal flashing and trim to withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failing, rattling, leaking, and fastener disengagement.

B. Fabricate and install roof edge flashing capable of resisting the following forces according to recommendations in FMG Loss Prevention Data Sheet 1-49:
   1. Wind Zone 2: For velocity pressures of 31 to 45 lbf/sq. ft.: 90-lbf/sq. ft. perimeter uplift force, 120-lbf/sq. ft. corner uplift force, and 45-lbf/sq. ft. outward force.

C. Thermal Movements: Provide sheet metal flashing and trim that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing 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 sheet metal and trim thermal movements. Base engineering calculation 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.

D. Water Infiltration: Provide sheet metal flashing and trim that do not allow water infiltration to building interior.

1.4 SUBMITTALS

A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.

B. Shop Drawings: Show layouts of sheet metal flashing and trim, including plans and elevations. Distinguish between shop- and field-assembled work. Include the following:
1. Identify material, thickness, weight, and finish for each item and location in Project.
2. Details for forming sheet metal flashing and trim, including profiles, shapes, seams, and dimensions.
3. Details for fastening, joining, supporting, and anchoring sheet metal flashing and trim, including fasteners, clips, cleats, and attachments to adjoining work.
4. Details of expansion-joint covers, including showing direction of expansion and contraction.

C. Samples for Verification: For each type of exposed finish required, prepared on Samples of size indicated below:
1. Sheet Metal Flashing: 12 inches long. Include fasteners, cleats, clips, closures, and other attachments.
2. Trim: 12 inches long. Include fasteners and other exposed accessories.
3. Accessories: Full-size Sample.

1.5 QUALITY ASSURANCE

A. Sheet Metal Flashing and Trim Standard: Comply with SMACNA's "Architectural Sheet Metal Manual." Conform to dimensions and profiles shown unless more stringent requirements are indicated.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver sheet metal flashing materials and fabrications undamaged. Protect sheet metal flashing and trim materials and fabrications during transportation and handling.

B. Unload, store, and install sheet metal flashing materials and fabrications in a manner to prevent bending, warping, twisting, and surface damage.

C. Stack materials on platforms or pallets, covered with suitable weathertight and ventilated covering. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage.

1.7 COORDINATION

A. Coordinate installation of sheet metal flashing and trim with interfacing and adjoining construction to provide a leakproof, secure, and noncorrosive installation.

PART 2 - PRODUCTS

A. In other Part 2 articles where titles below introduce lists, the following requirements apply for product selection:
1.
2. Products: Subject to compliance with requirements, provide one of the products specified.
3.
4. Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the manufacturers specified.
5.

Centria Architectural Systems

McElroy Metal, Inc.

Englert, Inc.
Atas.
PacClad.

2.2 UNDERLAYMENT MATERIALS

A. Felts: ASTM D 226, Type II (No. 30), asphalt-saturated organic felt, nonperforated.

B. Slip Sheet: Rosin-sized paper, minimum 3 lb/100 sq. ft..

2.3 SHEET METALS

A. Lead-Coated Copper Sheet: ASTM B 101, Temper H00 and H01, cold-rolled copper sheet, of ~~weight~~ indicated below, coated both sides with lead weighing not less than ~~12 lb/100 sq. ft.~~ nor more than ~~15 lb/100 sq. ft.~~ of copper sheet (total weight of lead applied equally to both sides). – ADDENDUM 1.1

B. Prepainted, Metallic-Coated Steel Sheet: Steel sheet metallic coated by the hot-dip process and prepainted by the coil-coating process to comply with ASTM A 755/A 755M.
1. Aluminum-Zinc Alloy-Coated Steel Sheet: ASTM A 792/A 792M, Class AZ50 coating designation, Grade 40; structural quality.
2. Exposed Finishes: Apply the following coil coating:
a. High-Performance Organic Finish: Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
1) Fluoropolymer 2-Coat System: Manufacturer's standard 2-coat, thermocured system consisting of specially formulated inhibitive primer and fluoropolymer color topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight; complying with physical properties and coating performance requirements of AAMA 2604.
2) Color: Medium Bronze or as selected by Architect.

2.4 MISCELLANEOUS MATERIALS

A. General: Provide materials and types of fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation.

B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads.
1. Fasteners for Flashing and Trim: Blind fasteners or self-drilling screws, gasketed, with hex washer head.

C. Sealing Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealing tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape.

D. 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.

2.5 FABRICATION, GENERAL

A. General: Custom fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of

item indicated. Shop fabricate items where practicable. Obtain field measurements for accurate fit before shop fabrication.

B. 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.

C. Fabricate sheet metal flashing and trim without excessive oil canning, buckling, and tool marks and true to line and levels indicated, with exposed edges folded back to form hems.
1. Seams for Aluminum: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints for additional strength.
2. Seams for Other Than Aluminum: Fabricate nonmoving seams in accessories with flat-lock seams. Tin edges to be seamed, form seams, and solder.

D. Sealed Joints: Form nonexpansion but movable joints in metal to accommodate elastomeric sealant to comply with SMACNA recommendations.

E. Expansion Provisions: Where lapped or bayonet-type expansion provisions in the Work cannot be used, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with elastomeric sealant concealed within joints.

F. Conceal fasteners and expansion provisions where possible on exposed-to-view sheet metal flashing and trim, unless otherwise indicated.

G. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.
1. Thickness: As recommended by SMACNA's "Architectural Sheet Metal Manual" for application but not less than thickness of metal being secured.

2.6 LOW-SLOPE ROOF SHEET METAL FABRICATIONS

A. Roof Edge Flashing (Gravel Stop) and Fascia Caps: Fabricate in minimum 96-inch- long, but not exceeding 10-foot- long, sections. Furnish with 6-inch- wide joint cover plates.
1. Joint Style: Lap, 6 inches wide.
2. Fabricate with scuppers spaced as shown, of dimensions required with 4-inch- wide flanges and base extending 6 inches beyond cant or tapered strip into field of roof. Fasten gravel guard angles to base of scupper.
3. Fabricate scuppers from the following material:
   a. Prepainted, Metallic-Coated Steel: 0.0276 inch thick to match existing color.

B. Copings: Fabricate in minimum 96-inch- long, but not exceeding 10-foot- long, sections. Fabricate joint plates of same thickness as copings. Furnish with continuous cleats to support edge of external leg and drill elongated holes for fasteners on interior leg. Miter corners, seal, and solder or weld watertight.
1. Joint Style: Butt, with 12-inch- wide concealed backup plate.
2. Fabricate copings from the following material:
   a. Lead-Coated Copper: 25 oz./sq. ft..

C. Roof and Roof to Wall Transition and Roof to Sheet Metal Roof Edging Transition Expansion-Joint Cover: Fabricate from the following material:
1. Lead-Coated Copper: 17.2 oz./sq. ft..

D. Base Flashing: Fabricate from the following material:
1. Lead-Coated Copper: 21.2 oz./sq. ft..

E. Counterflashing: Fabricate from the following material:

1. Lead-Coated Copper: 17.2 oz./sq. ft..

F. Flashing Receivers: Fabricate from the following material:
1. Lead-Coated Copper: 17.2 oz./sq. ft..

G. Roof-Penetration Flashing: Fabricate from the following material:
1. Pre molded.

H. Roof-Drain Flashing: Fabricate from the following material:
1. Roof membrane

I. Continuous ridge vent

J. Continuous Perforated eave vent.

2.7 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: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other 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 work.
1. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
2. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 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, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.
1. Torch cutting of sheet metal flashing and trim is not permitted.

B. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with bituminous coating or by other permanent separation as recommended by fabricator or manufacturers of dissimilar metals.
1. Coat side of sheet metal flashing and trim with bituminous coating where flashing and trim will contact wood, ferrous metal, or cementitious construction.

2. Underlayment: Where installing metal flashing directly on cementitious or wood substrates, install a course of felt underlayment and cover with a slip sheet or install a course of polyethylene underlayment.
3. Bed flanges in thick coat of asphalt roofing cement where required for waterproof performance.

C. Install exposed sheet metal flashing and trim without excessive oil canning, buckling, and tool marks.

D. Install sheet metal flashing and trim true to line and levels indicated. Provide uniform, neat seams with minimum exposure of solder, welds, and elastomeric sealant.

E. 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.
1. Space cleats not more than 12 inches apart. Anchor each cleat with two fasteners. Bend tabs over fasteners.

F. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet with no joints allowed within 24 inches of corner or intersection. Where lapped or bayonet-type expansion provisions cannot be used or would not be sufficiently watertight, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with elastomeric sealant concealed within joints.

G. Fasteners: Use fasteners of sizes that will penetrate substrate not less than 1-1/4 inches for nails and not less than 3/4 inch for wood screws.
1. Galvanized or Prepainted, Metallic-Coated Steel: Use stainless-steel fasteners.
2. Aluminum: Use aluminum or stainless-steel fasteners.
3. Copper Use copper or stainless-steel fasteners.
4. Stainless Steel: Use stainless-steel fasteners.

H. Seal joints with elastomeric sealant as required for watertight construction.
1. Where sealant-filled joints are used, 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 moderate, between 40 and 70 deg F, set joint members for 50 percent movement either 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 Division 7 Section "Joint Sealants."

3.3 ROOF FLASHING INSTALLATION

A. General: Install sheet metal roof flashing and trim to comply with performance requirements, sheet metal manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, set units true to line, and level as indicated. Install work with laps, joints, and seams that will be permanently watertight.

B. Counterflashing: Coordinate installation of counterflashing with installation of base flashing. Insert counterflashing in reglets or receivers and fit tightly to base flashing. Extend counterflashing 4 inches over base flashing. Lap counterflashing joints a minimum of 4 inches and bed with elastomeric sealant.
1. Secure in a waterproof manner by means of snap-in installation and sealant or lead wedges and sealant.

C. Roof-Penetration Flashing: Coordinate installation of roof-penetration flashing with installation of roofing and other items penetrating roof. Install flashing as follows:
1. Turn lead flashing down inside vent piping, being careful not to block vent piping with flashing.

2. Seal with elastomeric sealant and clamp flashing to pipes penetrating roof except for lead flashing on vent piping.

3.4 WALL FLASHING INSTALLATION

A. General: Install sheet metal wall flashing to intercept and exclude penetrating moisture according to SMACNA recommendations and as indicated. Coordinate installation of wall flashing with installation of wall-opening components such as windows, doors, and louvers.

B. Through-Wall Flashing: Installation of through-wall flashing is specified in Division 4 Section "Unit Masonry Assemblies."

3.5 CLEANING AND PROTECTION

A. Clean off excess sealants.

B. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed. On completion of installation, clean finished surfaces, including removing unused fasteners, metal filings, pop rivet stems, and pieces of flashing. Maintain in a clean condition during construction.

C. 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 07620

SECTION 07720 - ROOF ACCESSORIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes the following:
1. Preformed flashings.
2. Wall louvers
3. Soffit unit vents
4.

B. Related Sections include the following:
1. Division 6 Section "Miscellaneous Carpentry" for roof sheathing, wood cants, and wood nailers.
2. Division 7 Section "Sheet Metal Flashing and Trim" for shop- and field-fabricated metal flashing and counterflashing, and miscellaneous sheet metal trim and accessories.

1.3 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. Samples: For each type of exposed factory-applied color finish required and for each type of roof accessory indicated, prepared on Samples of size to adequately show color.

C. Warranty: Special warranty specified in this Section.

1.4 QUALITY ASSURANCE

A. Sheet Metal Standard: Comply with SMACNA's "Architectural Sheet Metal Manual" details for fabrication of units, including flanges and cap flashing to coordinate with type of roofing indicated.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Pack, handle, and ship roof accessories properly labeled in heavy-duty packaging to prevent damage.

1.6 PROJECT CONDITIONS

A. Field Measurements: Verify required openings for each type of roof accessory by field measurements before fabrication and indicate measurements on Shop Drawings.

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.
   1. With Architect's approval, adjust location of roof accessories that would interrupt roof drainage routes.

1.8 WARRANTY

A. Special Warranty on Painted Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish 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 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, manufacturers listed in other Part 2 articles.

2.2 METAL MATERIALS

A. Prepainted, Metallic-Coated Steel Sheet: Steel sheet metallic coated by hot-dip process and prepainted by coil-coating process to comply with ASTM A 755/A 755M.
   1. Galvanized Steel Sheet: ASTM A 653/A 653M, G90 coated.
   2. Aluminum-Zinc Alloy-Coated Steel Sheet: ASTM A 792/A 792M, Class AZ50 coated.
   3. Exposed Finishes: High-Performance Organic Finish (2-Coat Fluoropolymer): Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturer's written instructions.
      a. Fluoropolymer 2-Coat System: Manufacturer's standard 2-coat, thermocured system consisting of specially formulated inhibitive primer and fluoropolymer color topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight; complying with physical properties and coating performance requirements in AAMA 2604, except as modified below:
         1) Humidity Resistance: 2000 hours.
         2) Salt-Spray Resistance: 2000 hours.

2.3 MISCELLANEOUS MATERIALS

A. Polyisocyanurate Board Insulation: ASTM C 1289, 1 inch thick.

B. Wood Nailers: Softwood lumber, pressure treated with waterborne preservatives for aboveground use, complying with AWPA C2; not less than 1-1/2 inches thick.

C. Bituminous Coating: Cold-applied asphalt mastic, SSPC-Paint 12, compounded for 15-mil dry film thickness per coat. Provide inert-type noncorrosive compound free of asbestos fibers, sulfur components, and other deleterious impurities.

D. Polyethylene Sheet: 6-mil- thick, polyethylene sheet complying with ASTM D 4397.

E. Felt: ASTM D 226, Type II (No. 30), asphalt-saturated organic felt, nonperforated.
1. Slip Sheet: Rosin-sized paper, minimum 3 lb/100 sq. ft..

F. Fasteners: Same metal as metals being fastened, or nonmagnetic stainless steel or other noncorrosive metal as recommended by roof accessory manufacturer. Match finish of exposed fasteners with finish of material being fastened. Provide nonremovable fastener heads to exterior exposed fasteners.

G. Gaskets: Manufacturer's standard tubular or fingered design of neoprene, EPDM, or PVC; or flat design of foam rubber, sponge neoprene, or cork.

H. Elastomeric Sealant: ASTM C 920, polyurethane sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.

I. Roofing Cement: ASTM D 4586, nonasbestos, fibrated asphalt cement designed for trowel application or other adhesive compatible with roofing system.

2.4 PREFORMED FLASHINGS

A. Exhaust Vent Flashings: Double-wall metal flashing sleeve, urethane insulation filled, with integral deck flange, 12 inches high, with removable metal hood and slotted metal collar, and as follows:
1. Available Manufacturers:
a. Thaler Metal Industries Ltd.
2. Metal: Copper sheet, 16 oz..

B. Vent Stack Flashing: Metal flashing sleeve, with integral deck flange, uninsulated, and as follows:
1. Available Manufacturers:
a. Thaler Metal Industries Ltd.
2. Metal: Copper sheet, 16 oz.
3. Height: 12 inches.
4. Diameter: As required.

C. Wall Louvers
1. Basis-of-Design Product: Architectural Louvers; Model E2JS. Subject to compliance with requirements, provide the specified product or comparable product by one of the following:
a. Manufacturers of equivalent products submitted and approved in accordance with Section 01630 - Product Substitution Procedures.
b. Louver Depth: 2 inches (50 mm)
c. Frame and Blade Nominal Thickness: Not less than 0.063 inch (1.60 mm) for blades and frames.
d. Free Area: Not less than 50%.
e. Bird Screening: Flattened, expanded aluminum, 1/2 by 0.050 inch (19 by 1.27 mm) thick.

D. Soffit Unit Louvers
a. Basis-of-Design Product: Architectural Louvers; Model E2JS, per Item C.

E. Continuous Soffit Vents
a. Basis-of-Design Product: Air Vent, Inc; Model SV201, 2-3/4"x96", 90% free area, pre-finished aluminum, color as selected by architect, or equal.

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 work.
   1. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored and is ready to receive roof accessories.
   2. Verify dimensions of roof openings for roof accessories.
   3. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. General: Install roof accessories according to manufacturer's written instructions. Anchor roof accessories securely in place and capable of resisting forces specified. Use fasteners, separators, sealants, and other miscellaneous items as required for completing roof accessory installation. Install roof accessories to resist exposure to weather without failing, rattling, leaking, and fastener disengagement.

B. Install roof accessories to fit substrates and to result in watertight performance.

C. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.
   1. Coat concealed side of stainless-steel roof accessories with bituminous coating where in contact with wood, ferrous metal, or cementitious construction.
   2. Underlayment: Where installing exposed-to-view components of 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 underlayment.
   3. Bed flanges in thick coat of asphalt roofing cement where required by roof accessory manufacturers for waterproof performance.

D. Install roof accessories level, plumb, true to line and elevation, and without warping, jogs in alignment, excessive oil canning, buckling, or tool marks.

E. Roof Curb Installation:
   1. Set roof curb so top surface of roof curb is level.

F. Equipment Support Installation:
   1. Set equipment support so top surface of equipment support is level.

G. Preformed Flashing Installation:
   1. Secure to roof membrane according to vent and stack flashing manufacturer's written instructions.

H. Seal joints with elastomeric sealant as required by manufacturer of roof accessories.

3.3 TOUCH UP

A. Touch up factory-primed surfaces with compatible primer ready for field painting in accordance with Division 9 painting Sections.

B. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780.

3.4 CLEANING

A. Clean exposed surfaces according to manufacturer's written instructions.

END OF SECTION 07720

SECTION 07920 - JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes joint sealants for the following applications, including those specified by reference to this Section:
   1. Exterior joints in the following vertical surfaces and horizontal nontraffic surfaces:
      a. Construction joints in cast-in-place concrete.
      b. Control and expansion joints in unit masonry.
      c. Joints between metal panels.
      d. Joints between different materials listed above.
      e. Perimeter joints between materials listed above and frames of doors, windows and louvers.
      f. Control and expansion joints in ceilings and other overhead surfaces.
      g. Other joints as indicated.

1.3 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.

1.4 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. Product Certificates: For each type of joint sealant and accessory, signed by product manufacturer.

E. SWRI Validation Certificate: For each elastomeric sealant specified to be validated by SWRI's Sealant Validation Program.

F. Qualification Data: For Installer.

G. Preconstruction Field Test Reports: Indicate which sealants and joint preparation methods resulted in optimum adhesion to joint substrates based on preconstruction testing specified in "Quality Assurance" Article.

H. 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.

I. Field Test Report Log: For each elastomeric sealant application.

J. Product Test Reports: Based on comprehensive testing of product formulations performed by a qualified testing agency, indicating that sealants comply with requirements.

K. Warranties: Special warranties specified in this Section.

1.5 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. 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.

D. Product Testing: Obtain test results for "Product Test Reports" Paragraph in "Submittals" Article from a qualified testing agency based on testing current sealant formulations within a 36-month period preceding the Notice to Proceed with the Work.
1. Testing Agency Qualifications: An independent testing agency qualified according to ASTM C 1021 to conduct the testing indicated, as documented according to ASTM E 548.
2. Test elastomeric joint sealants for compliance with requirements specified by reference to ASTM C 920, and where applicable, to other standard test methods.
3. Test elastomeric joint sealants 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.
4. Test other joint sealants for compliance with requirements indicated by referencing standard specifications and test methods.

E. Preconstruction Field-Adhesion Testing: Before installing elastomeric sealants, field test their adhesion to Project joint substrates as follows:
1. Locate test joints where indicated on Project or, if not indicated, as directed by Architect.
2. Conduct field tests for each application indicated below:

a. Each type of elastomeric sealant and joint substrate indicated.
b. Each type of nonelastomeric sealant and joint substrate indicated.

3. Notify Architect seven days in advance of dates and times when test joints will be erected.
4. Arrange for tests to take place with joint-sealant manufacturer's technical representative present.
   a. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193.
      1) For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.
5. Report whether sealant in joint connected to pulled-out portion failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each type of product and joint substrate. For sealants that fail adhesively, retest until satisfactory adhesion is obtained.
6. Evaluation of Preconstruction Field-Adhesion-Test Results: Sealants not evidencing adhesive failure from testing, in absence of other indications of noncompliance with requirements, will be considered satisfactory. Do not use sealants that fail to adhere to joint substrates during testing.

1.6 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.

1.7 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: Two 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 MANUFACTURERS

A. Products: Subject to compliance with requirements, provide one of the products listed in other Part 2 articles.

2.2 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 sealant manufacturer, based on testing and field experience.

B. VOC Content of Interior Sealants: Provide interior sealants and sealant primers that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
1. Sealants: 250 g/L.
2. Sealant Primers for Nonporous Substrates: 250 g/L.
3. Sealant Primers for Porous Substrates: 775 g/L.

C. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range.

2.3 ELASTOMERIC JOINT SEALANTS

A. Elastomeric Sealant Standard: Comply with ASTM C 920 and other requirements indicated for each liquid-applied chemically curing sealant, including those referencing ASTM C 920 classifications for type, grade, class, and uses.

B. Single-Component Nonsag Urethane Sealant: Where joint sealants of this type are indicated, provide products complying with the following:
1. Products: Provide one of the following.
   a. Vulkem 116; Mameco International.
   b. Vulkem 230; Mameco International.
   c. Sikaflex - 1a; Sika Corporation.
   d. NP 1; Sonneborn Building Products Div., ChemRex Inc.
   e. DyMonic; Tremco.
2. Type and Grade: S (single component) and NS (nonsag).
3. Class: 25.
4. Applications:
   a. Metal flashing joints.
   b. Joints between exterior metal frames and adjacent Work (except masonry).
   c. Under exterior door thresholds.

2.4 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. Backer Rod: ASTM C 1330, of type indicated below and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance:
1. Type C: Closed-cell material with a surface skin.

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.

2.5 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 from above cleaning operations by vacuuming or blowing out joints with oil-free compressed air. Porous joint surfaces 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.
      a. Metal.

B. Joint Priming: Prime joint substrates where indicated and 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.

1. Apply primer on all porous surfaces such as exterior masonry or precast concrete.

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 of 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 back of joints.

E. Install sealants by proven techniques to 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 provided for 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 sealants from surfaces adjacent to joint.
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.
   a. Use masking tape to protect adjacent surfaces of recessed tooled joints.

3.4 CLEANING

A. Clean off excess sealants 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 the original work.

END OF SECTION 07920

SUMMIT
ENVIRONMENTAL CONSULTANTS INC.

PN: 16535

May 16, 2008

Mr. Barry Ingraham
Northern Maine Community College
33 Edgemont Drive
Presque Isle, Maine 04769

Re: Limited Asbestos Identification Surveys for Four Structures Located on the Campus of the Northern Maine Community College in Presque Isle, Maine.

Dear Mr. Ingraham:

At your request, Summit Environmental Consultants, Inc. (Summit) completed asbestos roof surveys for the following structures located on the campus of the Northern Maine Community College in Presque Isle, Maine:

- Aroostook Hall;
- Penobscot Hall;
- Reed Commons; and
- Washington Hall.

The surveys were completed to provide you with information regarding the presence of asbestos containing materials (ACM) associated with the roofing materials present on the above referenced structures. Mr. Dennis Kingman (Summit), an asbestos inspector licensed in the State of Maine, performed the field survey on May 9, 2008. Completion of the asbestos roof surveys included:

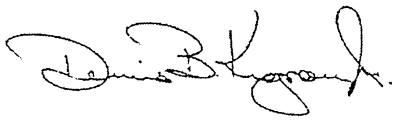
- Visual identification of suspect ACM associated with the roof systems; and
- Collection of bulk samples of the identified suspect ACM in accordance with Maine Department of Environmental Protection (DEP) regulations.

Following the completion of the survey work, the bulk samples of suspect ACM were submitted to EMSL-MA (EMSL) of Woburn, Massachusetts for analysis. The method used to analyze the bulk samples collected during this survey was the recommended EPA procedure of Polarized Light Microscopy (PLM) with dispersion staining. Samples were analyzed at the EMSL laboratories, which are certified to perform asbestos

Laboratory analytical results indicated that the asphalt roof shingles and the associated felt paper underlayment were identified as asbestos-containing.

Please contact me at (207) 262-9040 if you have any questions related to this project or if additional services are required.

Sincerely,
SUMMIT ENVIRONMENTAL CONSULTANTS, INC.



Dennis B. Kingman, Jr. CHMM
Manager, Environmental Services
MEDEP Asbestos Inspector AI-0034

Attachment

APPENDIX A

LABORATORY ANALYTICAL RESULTS

AROOSTOOK HALL

EMSL Analytical, Inc.
7 Constitution Way, Suite 107, Woburn, MA 01801
Phone: (781) 933-8411 Fax: (781) 933-8412 Email: bostonlab@emsl.com

Attn: **Dennis Kingman**
Summit Environmental Consultants, Inc.
8 Harlow Street
Suite 4A
Bangor, ME 04401

Fax: (207) 262-9080 Phone: (207) 262-9040
Project: **16535 / Aroostook Hall - NMCC, Presque Isle, ME**

Customer ID: SUMM78
Customer PO:
Received: 05/12/08 9:15 AM
EMSL Order: 130801645

EMSL Proj:
Analysis Date: 5/15/2008
Report Date: 5/15/2008

Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos			Asbestos
Sample	**Location**	**Appearance**	**% Fibrous**		**% Non-Fibrous**	**% Type**
A-001A *130801645-0001*	Roof Shingles	Black Fibrous Heterogeneous	20%	Glass	80% Non-fibrous (other)	**None Detected**
A-001B *130801645-0002*	Roof Shingles	Black Fibrous Heterogeneous	20%	Glass	80% Non-fibrous (other)	**None Detected**
A-001C *130801645-0003*	Roof Shingles	Black Fibrous Heterogeneous	20%	Glass	80% Non-fibrous (other)	**None Detected**
A-002A *130801645-0004*	Roof Felt Under 001A	Black Fibrous Heterogeneous	60%	Cellulose	35% Non-fibrous (other)	**5% Chrysotile**
A-002B *130801645-0005*	Roof Felt Under 001B					**Stop Positive (Not Analyzed)**
A-002C *130801645-0006*	Roof Felt Under 001C					**Stop Positive (Not Analyzed)**

Analyst(s)

Steve Grise (6)

or other approved signatory

Due to magnification limitations inherent in PLM, asbestos fibers in dimensions below the resolution capability of PLM may not be detected. Samples reported as <1% or none detected may require additional testing by TEM to confirm asbestos quantities. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL's liability is limited to the cost of analysis. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted.

NVLAP Lab Code 101147-0, AIHA IHLAP 180179, MA AA000188

PLM-1

THIS IS THE LAST PAGE OF THE REPORT.

130801645

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(212) 290-0058 Fax

EMSL – NJ
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Westmont, NJ 08108
(800) 220-3675
(856) 858-4960 Fax

www.emsl.com

Your Name: Dennis Kingman Project Manager: DBK

Company: Summit Environmental Consultants, Inc.

Street: [illegible] Suite 4A

City/State/Zip: Bangor, Maine 04401

Phone: 27-262-9040 Fax: 207-262-9080 Email: dkingman@summitenv.com

Project Name: Androscoggin Hall - NMCC Project #: 16535

Project Location: Presque Isle Project State (US): ME

TURNAROUND TIME

☐ 3 Hours	☐ 6 Hours	☐ 12 Hours	☐ 24 Hours	☐ 48 Hours	☒ 72 Hours	☐ 4 Days	☐ 5 Days	☐ 6-10 Days

SAMPLE MATRIX

☐ Air	☒ Bulk	☐ Soil	☐ Wipe	☐ Micro-Vac	☐ Drinking Water	☐ Wastewater	☐ Chips	☐ Other

ASBESTOS ANALYSIS

PCM - Air
- ☐ NIOSH 7400 (A) Issue 2: August 1994
- ☐ OSHA w/TWA

TEM AIR
- ☐ AHERA 40 CFR, Part 763 Subpart E
- ☐ NIOSH 7402 Issue 2
- ☐ EPA Level II

PLM - Bulk
- ☒ EPA 600/R-93/116
- ☐ NY Stratified Point Count
- ☐ California Air Resource Board (CARB) 435
- ☐ NIOSH 9002
- ☐ PLM NOB (Gravimetric) NYS 198.1
- ☐ EPA Point Count (400 Points)
- ☐ EPA Point Count (1,000 Points)
- ☐ Standard Addition Point Count

SOILS
- ☐ EPA Protocol Qualitative
- ☐ EPA Protocol Quantitative
- ☐ EMSL MSD 9000 Method fibers/gram
- ☐ Superfund EPA 540-R097-028 (dust generation)

TEM BULK
- ☐ Drop Mount (Qualitative)
- ☐ Chatfield SOP-1988-02
- ☐ TEM NOB (Gravimetric) NY 198.4

TEM MICROVAC
- ☐ ASTM D 5755-95 (Quantitative)

TEM WIPE
- ☐ ASTM D-6480-99
- ☐ Qualitative ☐

TEM WATER
- ☐ EPA 100.1
- ☐ EPA 100.2
- ☐ NYS 198.2
- ☐ Other: _____

LEAD ANALYSIS

Flame Atomic Absorption
- ☐ Wipe, SW846-7420 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-7420
- ☐ Air, NIOSH 7082
- ☐ Chips, SW846-7420 or AOAC 5.009 (974.02)
- ☐ Wastewater, SW 846-7420
- ☐ TCLP LEAD SW846-1311/7420

Graphite Furnace Atomic Absorption
- ☐ Air, NIOSH 7105
- ☐ Wastewater, SW846-7421
- ☐ Soil, SW846-7421
- ☐ Drinking Water, EPA 239.2

ICP – Inductively Coupled Plasma
- ☐ Wipe, SW846-6010 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-6010
- ☐ Air, NIOSH 7300

MATERIALS ANALYSIS
- ☐ Full Particle Identification
- ☐ Optical Particle Identification
- ☐ Dust Mites and Insect Fragments
- ☐ Particle Size & Distribution
- ☐ Product Comparison
- ☐ Paint Characterizaton
- ☐ Failure Analysis
- ☐ Corrosion Analysis
- ☐ Glove Box Containment Study
- ☐ Petrographic Examination of Concrete
- ☐ Portland Cement in Workplace Atmospheres (OSHA ID-143)
- ☐ Man Made Vitrous Fibers – MMVF's
- ☐ Synthetic Fiber Identification
- ☐ Other: _____

MICROBIAL ANALYSIS

Air Samples
- ☐ Mold & Fungi by Air O Cell
- ☐ Mold & Fungi by Agar Plate count & id
- ☐ Bacterial Count and Gram Stain
- ☐ Bacterial Count and Identification

Water Samples
- ☐ Total Coliforms, Fecal Coliforms
- ☐ Escherichia Coli, Fecal Streptococcus
- ☐ Legionella
- ☐ Salmonella
- ☐ Giardia and Cryptosporidium

Wipe and Bulk Samples
- ☐ Mold & Fungi – Direct Examination
- ☐ Mold & Fungi – (Culture follow up to direct examination if necessary)
- ☐ Mold & Fungi – Culture (Count & ID)
- ☐ Mold & Fungi – Culture (Count only)
- ☐ Bacterial Count & Gram Stain
- ☐ Bacterial Count & Identification (3 most prominent types)
- ☐ Other: _____

IAQ ANALYSIS
- ☐ Nuisance Dust (NIOSH 0500 & 0600)
- ☐ Airborne Dust (PM10, TSP)
- ☐ Silica Analysis by XRD ☐ Niosh 7500
- ☐ HVAC Efficiency
- ☐ Carbon Black
- ☐ Airborne Oil Mist
- ☐ Other: _____

Additional Information/Comments/Instructions: Positive Stop

Client Sample # (S): A-001A, A-002C TOTAL SAMPLE #: 6

Relinquished: [signature] Date: 05/09/08 Time: 1600

Received: Date: Time:

Relinquished: Date: Time:

Received: Date: Time:

Tracking # 791879251575 09.15 KB

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1308016455

Woostock

	SAMPLE NUMBER	SAMPLE DESCRIPTION/LOCATION	VOLUME Air (L)	Area (Inches sq.)
01	A-001A	Roof shingles		
02	B	" "		
03	C	" "		
04	002A	Roof paint under 001A		
05	B	" 001B		
06	C	" 001C		

Relinquished: _____ Date: 04/09/06 Time: 1600

Received: _____ Date: _____ Time: _____

Relinquished: _____ Date: _____ Time: _____

Received: _____ Date: _____ Time: _____

EMSL Analytical, Inc.
7 Constitution Way, Suite 107, Woburn, MA 01801
Phone: (781) 933-8411 Fax: (781) 933-8412 Email: bostonlab@emsl.com

Attn: **Dennis Kingman**
Summit Environmental Consultants, Inc.
8 Harlow Street
Suite 4A
Bangor, ME 04401

Fax: (207) 262-9080 Phone: (207) 262-9040
Project: **16535 / Penobscot Hall - NMCC, Presque Isle, ME**

Customer ID: SUMM78
Customer PO:
Received: 05/12/08 9:15 AM
EMSL Order: 130801648

EMSL Proj:
Analysis Date: 5/15/2008
Report Date: 5/15/2008

Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos			Asbestos
Sample	Location	Appearance	% Fibrous		% Non-Fibrous	% Type
P-001A *130801648-0001*	Roof Shingles	Black Fibrous Heterogeneous	20%	Glass	80% Non-fibrous (other)	None Detected
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P-001C *130801648-0003*	Roof Shingles	Black Fibrous Heterogeneous	20%	Glass	80% Non-fibrous (other)	None Detected
P-002A *130801648-0004*	Felt Paper Under 001A	Black Fibrous Homogeneous	30%	Cellulose	70% Non-fibrous (other)	None Detected
P-002B *130801648-0005*	Felt Paper Under 001B	Black Fibrous Homogeneous	30%	Cellulose	70% Non-fibrous (other)	None Detected
P-002C *130801648-0006*	Felt Paper Under 001C	Black Fibrous Homogeneous	30%	Cellulose	70% Non-fibrous (other)	None Detected

Analyst(s)

Steve Grise (6)

or other approved signatory

Due to magnification limitations inherent in PLM, asbestos fibers in dimensions below the resolution capability of PLM may not be detected. Samples reported as <1% or none detected may require additional testing by TEM to confirm asbestos quantities. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL's liability is limited to the cost of analysis. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client.Samples received in good condition unless otherwise noted.
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www.emsl.com

Your Name: Dennis Kingman
Project Manager: DBK
Company: Summit Environmental Consultants, Inc.
Street: [illegible]
City/State/Zip: Bangor, Maine 04401
Phone: 27-262-9040
Fax: 207-262-9080
Email: dkingman@summitenv.com
Project Name: Penobscot Hall – NMCC
Project #: 16535
Project Location: Presque Isle
Project State (US): ME

TURNAROUND TIME

☐ 3 Hours ☐ 6 Hours ☐ 12 Hours ☐ 24 Hours ☐ 48 Hours ☒ 72 Hours ☐ 4 Days ☐ 5 Days ☐ 6-10 Days

SAMPLE MATRIX

☐ Air ☒ Bulk ☐ Soil ☐ Wipe ☐ Micro-Vac ☐ Drinking Water ☐ Wastewater ☐ Chips ☐ Other

ASBESTOS ANALYSIS

PCM - Air
- ☐ NIOSH 7400 (A) Issue 2: August 1994
- ☐ OSHA w/TWA

TEM AIR
- ☐ AHERA 40 CFR, Part 763 Subpart E
- ☐ NIOSH 7402 Issue 2
- ☐ EPA Level II

PLM - Bulk
- ☒ EPA 600/R-93/116
- ☐ NY Stratified Point Count
- ☐ California Air Resource Board (CARB) 435
- ☐ NIOSH 9002
- ☐ PLM NOB (Gravimetric) NYS 198.1
- ☐ EPA Point Count (400 Points)
- ☐ EPA Point Count (1,000 Points)
- ☐ Standard Addition Point Count

SOILS
- ☐ EPA Protocol Qualitative
- ☐ EPA Protocol Quantitative
- ☐ EMSL MSD 9000 Method fibers/gram
- ☐ Superfund EPA 540-R097-028 (dust generation)

TEM BULK
- ☐ Drop Mount (Qualitative)
- ☐ Chatfield SOP-1988-02
- ☐ TEM NOB (Gravimetric) NY 198.4

TEM MICROVAC
- ☐ ASTM D 5755-95 (Quantitative)

TEM WIPE
- ☐ ASTM D-6480-99
- ☐ Qualitative☐

TEM WATER
- ☐ EPA 100.1
- ☐ EPA 100.2
- ☐ NYS 198.2
- ☐ Other:

LEAD ANALYSIS

Flame Atomic Absorption
- ☐ Wipe, SW846-7420 ☐ASTM ☐ non ASTM
- ☐ Soil, SW846-7420
- ☐ Air, NIOSH 7082
- ☐ Chips, SW846-7420 or AOAC 5.009 (974.02)
- ☐ Wastewater, SW 846-7420
- ☐ TCLP LEAD SW846-1311/7420

Graphite Furnace Atomic Absorption
- ☐ Air, NIOSH 7105
- ☐ Wastewater, SW846-7421
- ☐ Soil, SW846-7421
- ☐ Drinking Water, EPA 239.2

ICP – Inductively Coupled Plasma
- ☐ Wipe, SW846-6010 ☐ASTM ☐ non ASTM
- ☐ Soil, SW846-6010
- ☐ Air, NIOSH 7300

MATERIALS ANALYSIS

- ☐ Full Particle Identification
- ☐ Optical Particle Identification
- ☐ Dust Mites and Insect Fragments
- ☐ Particle Size & Distribution
- ☐ Product Comparison
- ☐ Paint Characterizaton
- ☐ Failure Analysis
- ☐ Corrosion Analysis
- ☐ Glove Box Containment Study
- ☐ Petrographic Examination of Concrete
- ☐ Portland Cement in Workplace Atmospheres (OSHA ID-143)
- ☐ Man Made Vitrous Fibers – MMVF's
- ☐ Synthetic Fiber Identification
- ☐ Other:

MICROBIAL ANALYSIS

Air Samples
- ☐ Mold & Fungi by Air O Cell
- ☐ Mold & Fungi by Agar Plate count & id
- ☐ Bacterial Count and Gram Stain
- ☐ Bacterial Count and Identification

Water Samples
- ☐ Total Coliforms, Fecal Coliforms
- ☐ Escherichia Coli, Fecal Streptococcus
- ☐ Legionella
- ☐ Salmonella
- ☐ Giardia and Cryptosporidium

Wipe and Bulk Samples
- ☐ Mold & Fungi – Direct Examination
- ☐ Mold & Fungi – (Culture follow up to direct examination if necessary)
- ☐ Mold & Fungi – Culture (Count & ID)
- ☐ Mold & Fungi – Culture (Count only)
- ☐ Bacterial Count & Gram Stain
- ☐ Bacterial Count & Identification (3 most prominent types)
- ☐ Other:

IAQ ANALYSIS

- ☐ Nuisance Dust (NIOSH 0500 & 0600)
- ☐ Airborne Dust (PM10, TSP)
- ☐ Silica Analysis by XRD ☐Niosh 7500
- ☐ HVAC Efficiency
- ☐ Carbon Black
- ☐ Airborne Oil Mist
- ☐ Other:

Additional Information/Comments/Instructions: Positive Stop

Client Sample # (S): P-001A P-002C
TOTAL SAMPLE #: 6

Relinquished: [signature]	Date: 05/07/08	Time: 1600
Received:	Date:	Time:
Relinquished:	Date:	Time:
Received:	Date:	Time:

Tracking #791897725 1575 05/10 [illegible]

130801648

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(203) 284-5978 Fax

EMSL – NY
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(212) 290-0058 Fax

EMSL – NJ
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Westmont, NJ 08108
(800) 220-3675
(856) 858-4960 Fax

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Pendyrach

	SAMPLE NUMBER	SAMPLE DESCRIPTION/LOCATION	VOLUME Air (L)	Area (Inches sq.)
01	P-001A	Roof debris		
02	001B	" "		
03	001C	" "		
04	002A	felt paper under 001A		
05	002B	" 001B		
06	002C	" 001C		

Relinquished: _____ Date: 05/09/08 Time: 1600

Received: _____ Date: _____ Time: _____

Relinquished: _____ Date: _____ Time: _____

Received: _____ Date: _____ Time: _____

07615 KB

REED COMMONS

13080164 4

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7 Constitution Way, Ste 107	4 Fairfield Blvd.	307 West 38th Street	107 Haddon Avenue
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(781) 933-8412 Fax	(203) 284-5978 Fax	(212) 290-0058 Fax	(856) 858-4960 Fax

www.emsl.com

Your Name: Dennis Kingman Project Manager: DBK

Company: Summit Environmental Consultants, Inc.

Street: 8 Harlow Street, Suite 4A

City/State/Zip: Bangor, Maine 04401

Phone: 27-262-9040 Fax: 207-262-9080 Email: dkingman@summitenv.com

Project Name: REED Commons - NMCC Project #: 16535

Project Location: Presque Isle Project State (US): ME

TURNAROUND TIME

☐ 3 Hours ☐ 6 Hours ☐ 12 Hours ☐ 24 Hours ☐ 48 Hours ☒ 72 Hours ☐ 4 Days ☐ 5 Days ☐ 6-10 Days

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- ☐ NY Stratified Point Count
- ☐ California Air Resource Board (CARB) 435
- ☐ NIOSH 9002
- ☐ PLM NOB (Gravimetric) NYS 198.1
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- ☐ EPA Point Count (1,000 Points)
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- ☐ EPA Protocol Quantitative
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- ☐ TEM NOB (Gravimetric) NY 198.4

TEM MICROVAC
- ☐ ASTM D 5755-95 (Quantitative)

TEM WIPE
- ☐ ASTM D-6480-99
- ☐ Qualitative ☐

TEM WATER
- ☐ EPA 100.1
- ☐ EPA 100.2
- ☐ NYS 198.2
- ☐ Other____

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Flame Atomic Absorption
- ☐ Wipe, SW846-7420 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-7420
- ☐ Air, NIOSH 7082
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- ☐ TCLP LEAD SW846-1311/7420

Graphite Furnace Atomic Absorption
- ☐ Air, NIOSH 7105
- ☐ Wastewater, SW846-7421
- ☐ Soil, SW846-7421
- ☐ Drinking Water, EPA 239.2

ICP – Inductively Coupled Plasma
- ☐ Wipe, SW846-6010 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-6010
- ☐ Air, NIOSH 7300

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- ☐ Optical Particle Identification
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- ☐ Product Comparison
- ☐ Paint Characterization
- ☐ Failure Analysis
- ☐ Corrosion Analysis
- ☐ Glove Box Containment Study
- ☐ Petrographic Examination of Concrete
- ☐ Portland Cement in Workplace Atmospheres (OSHA ID-143)
- ☐ Man Made Vitrous Fibers – MMVF's
- ☐ Synthetic Fiber Identification
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MICROBIAL ANALYSIS

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- ☐ Bacterial Count and Gram Stain
- ☐ Bacterial Count and Identification

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- ☐ Legionella
- ☐ Salmonella
- ☐ Giardia and Cryptosporidium

Wipe and Bulk Samples
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- ☐ Mold & Fungi – (Culture follow up to direct examination if necessary)
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- ☐ Mold & Fungi – Culture (Count only)
- ☐ Bacterial Count & Gram Stain
- ☐ Bacterial Count & Identification (3 most prominent types)
- ☐ Other____

IAQ ANALYSIS
- ☐ Nuisance Dust (NIOSH 0500 & 0600)
- ☐ Airborne Dust (PM10, TSP)
- ☐ Silica Analysis by XRD ☐ Niosh 7500
- ☐ HVAC Efficiency
- ☐ Carbon Black
- ☐ Airborne Oil Mist
- ☐ Other____

Additional Information/Comments/Instructions: Positive Stop

Client Sample # (S): R-001A – R-005C TOTAL SAMPLE #: 15

Relinquished:	[signature]	Date:	05/09/08	Time:	1600
Received:		Date:		Time:	
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Received:		Date:		Time:	

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(856) 858-4960 Fax

www.emsl.com

Reed Lennon

	SAMPLE NUMBER	SAMPLE DESCRIPTION/LOCATION	VOLUME Air (L)	Area (inches sq.)
01	R- 001 A	Flat built up roof - S°		
02	B	" " S°		
03	C	" " NP		
04	002 A	Edge flashing - S°		
05	B	" " S°		
06	C	" " NP		
07	003 A	Roof shingles		
08	B			
09	C			
10	004 A	Roof patch with 003A		
11	B	" " 003B		
12	C	" " 003C		
13	005 A	Roof patch - silver S°		
14	B	" " S°		
15	C	" " S°		

Relinquished: [signature] Date: 05/09/03 Time: 1600
Received: Date: Time:
Relinquished: Date: Time:
Received: Date: Time:

By Chris Ca

EMSL Analytical, Inc.
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Attn: Dennis Kingman
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Fax: (207) 262-9080 Phone: (207) 262-9040
Project: 16535 / Reed Commons - NHCC, Presque Isle, ME

Customer ID: SUMM78
Customer PO:
Received: 05/12/08 9:15 AM
EMSL Order: 130801644
EMSL Proj:
Analysis Date: 5/16/2008
Report Date: 5/16/2008

Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Location	Appearance	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
R-001A 130801644-0001	Flat Built-Up Roof	Black Fibrous Heterogeneous		95% Non-fibrous (other)	5% Chrysotile
R-001B 130801644-0002	Flat Built-Up Roof				Stop Positive (Not Analyzed)
R-001C 130801644-0003	Flat Built-Up Roof				Stop Positive (Not Analyzed)
R-002A 130801644-0004	Edge Flashing	Black Fibrous Heterogeneous	40% Cellulose	60% Non-fibrous (other)	None Detected
R-002B 130801644-0005	Edge Flashing	Black Fibrous Heterogeneous	40% Cellulose	60% Non-fibrous (other)	None Detected
R-002C 130801644-0006	Edge Flashing	Black Fibrous Heterogeneous	40% Cellulose	60% Non-fibrous (other)	None Detected
R-003A 130801644-0007	Roof Shingles	Black Fibrous Heterogeneous	10% Glass	90% Non-fibrous (other)	None Detected

Analyst(s)

Kevin Pine (15)

or other approved signatory

Due to magnification limitations inherent in PLM, asbestos fibers in dimensions below the resolution capability of PLM may not be detected. Samples reported as <1% or none detected may require additional testing by TEM to confirm asbestos quantities. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL's liability is limited to the cost of analysis. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted.

NVLAP Lab Code 101147-0, AIHA ILAP 100178, MA AA000188

PENOBSCOT HALL

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Fax: (207) 262-9080 Phone: (207) 262-9040
Project: 16535 / Road Commons - NMCC, Presque Isle, ME

Customer ID: SUMM78
Customer PO:
Received: 05/12/08 9:15 AM
EMSL Order: 130801644

EMSL Proj:
Analysis Date: 5/16/2008
Report Date: 5/16/2008

Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Location	Appearance	Non-Asbestos %	Fibrous	% Non-Fibrous	Asbestos % Type
R-005B 130801644-0008	Roof Shingles	Black Fibrous Heterogeneous	20%	Cellulose	80% Non-fibrous (other)	None Detected
R-003C 130801644-0009	Roof Shingles	Black Fibrous Heterogeneous	10%	Glass	90% Non-fibrous (other)	None Detected
R-004A 130801644-0010	Felt Paper Under 003A	Black Fibrous Heterogeneous	40%	Cellulose	60% Non-fibrous (other)	None Detected
R-004B 130801644-0011	Felt Paper Under 003B	Black Fibrous Heterogeneous	40%	Cellulose	60% Non-fibrous (other)	None Detected
R-004C 130801644-0012	Felt Paper Under 003C	Black Fibrous Heterogeneous	40%	Cellulose	60% Non-fibrous (other)	None Detected
R-005A 130801644-0013	Roof Patch, Silver	Black/Silver Fibrous Heterogeneous	10% 10%	Cellulose Glass	70% Non-fibrous (other)	10% Chrysotile
R-005B 130801644-0014	Roof Patch, Silver					Stop Positive (Not Analyzed)

Analyst(s)

Kevin Pine (1,5)

or other approved signatory

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NVLAP Lab Code 101147-0, AIHA-LAP 150179, MA AA000168

PLM-1

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7 Constitution Way, Suite 107, Woburn, MA 01801
Phone: (781) 933-8411 Fax: (781) 933-8412 Email: bostonlab@emsl.com

Attn: Dennis Kinginan
Summit Environmental Consultants, Inc.
8 Harlow Street
Suite 4A
Bangor, ME 04401

Fax: (207) 262-9080 Phone: (207) 262-9040
Project: 16535 / Reed Commons - NMCC, Presque Isle, ME

Customer ID: SUMM78
Customer PO:
Received: 05/12/08 9:15 AM
EMSL Order: 130901644

EMSL Proj:
Analysis Date: 5/16/2008
Report Date: 5/16/2008

Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Location	Appearance	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
R-005C 130901644-0015	Roof Patch, Silver	-			Stop Positive (Not Analyzed)

Analyst(s)

Kevin Pine (15)

or other approved signatory

Due to magnification limitations inherent in PLM, asbestos fibers in dimensions below the resolution capability of PLM may not be detected. Samples reported as <1% or none detected may require additional testing by TEM to confirm asbestos quantities. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL's liability is limited to the cost of analysis. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted.
NVLAP Lab Code 101147-0, AIHA IHLAP 161172, MA AA000188

PLM-1

THIS IS THE LAST PAGE OF THE REPORT.

WASHINGTON HALL

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Attn: **Dennis Kingman**
Summit Environmental Consultants, Inc.
8 Harlow Street
Suite 4A
Bangor, ME 04401

Fax: (207) 262-9080 Phone: (207) 262-9040
Project: **16536 / Washington Hall - NMCC, Presque Isle, ME**

Customer ID: SUMM78
Customer PO:
Received: 05/12/08 9:15 AM
EMSL Order: 130801646

EMSL Proj:
Analysis Date: 5/15/2008
Report Date: 5/15/2008

Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos			Asbestos
Sample	**Location**	**Appearance**	**% Fibrous**		**% Non-Fibrous**	**% Type**
W-001A *130801646-0001*	Roof Shingles	Black Fibrous Heterogeneous	55% Cellulose Sample appears to be felt paper.		40% Non-fibrous (other)	**5% Chrysotile**
W-001B *130801646-0002*	Roof Shingles					**Stop Positive (Not Analyzed)**
W-001C *130801646-0003*	Roof Shingles					**Stop Positive (Not Analyzed)**
W-002A *130801646-0004*	Felt Paper Under 001A	Black Fibrous Heterogeneous	20% Glass Sample appears to be shingle.		80% Non-fibrous (other)	**None Detected**
W-002B *130801646-0005*	Felt Paper Under 001B	Black Fibrous Heterogeneous	55% Cellulose		40% Non-fibrous (other)	**5% Chrysotile**
W-002C *130801646-0006*	Felt Paper Under 001C					**Stop Positive (Not Analyzed)**

Analyst(s)

Steve Grise (6)

or other approved signatory

Due to magnification limitations inherent in PLM, asbestos fibers in dimensions below the resolution capability of PLM may not be detected. Samples reported as <1% or none detected may require additional testing by TEM to confirm asbestos quantities. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL's liability is limited to the cost of analysis. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client.Samples received in good condition unless otherwise noted.

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PLM-1

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Your Name: Dennis Kingman Project Manager: DBK
Company: Summit Environmental Consultants, Inc.
Street: [illegible]
City/State/Zip: Bangor, Maine 04401
Phone: 27-262-9040 Fax: 207-262-9080 Email: dkingman@summitenv.com
Project Name: Washington Hall - NMCC Project #: 16536
Project Location: Presque Isle Project State (US): ME

TURNAROUND TIME

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- ☐ EPA Protocol Quantitative
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- ☐ ASTM D 5755-95 (Quantitative)

TEM WIPE
- ☐ ASTM D-6480-99
- ☐ Qualitative☐

TEM WATER
- ☐ EPA 100.1
- ☐ EPA 100.2
- ☐ NYS 198.2
- ☐ Other:________

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- ☐ Air, NIOSH 7082
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- ☐ Optical Particle Identification
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- ☐ Product Comparison
- ☐ Paint Characterizaton
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- ☐ Bacterial Count & Gram Stain
- ☐ Bacterial Count & Identification (3 most prominent types)
- ☐ Other:________

IAQ ANALYSIS

- ☐ Nuisance Dust (NIOSH 0500 & 0600)
- ☐ Airborne Dust (PM10, TSP)
- ☐ Silica Analysis by XRD ☐Niosh 7500
- ☐ HVAC Efficiency
- ☐ Carbon Black
- ☐ Airborne Oil Mist
- ☐ Other:________

Additional Information/Comments/Instructions: Positive Stop

Client Sample # (S) W-001A W-002C TOTAL SAMPLE # 6

Relinquished:	[signature]	Date:	03/09/07	Time:	1600
Received:		Date:		Time:	
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Washington

SAMPLE NUMBER	SAMPLE DESCRIPTION/LOCATION	VOLUME Air (L)	Area (Inches sq.)
W-001 A	Roof shingles		
B	" "		
C	" "		
002 A	felt paper under 001A		
B	" " 001B		
C	" " 001C		

Relinquished:	[signature]	Date:	05/09/05	Time:	1600
Received:		Date:		Time:	
Relinquished:		Date:		Time:	
Received:		Date:		Time:	